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AMERICAN BEE JOURNAL

SEPTEMBER, 1920



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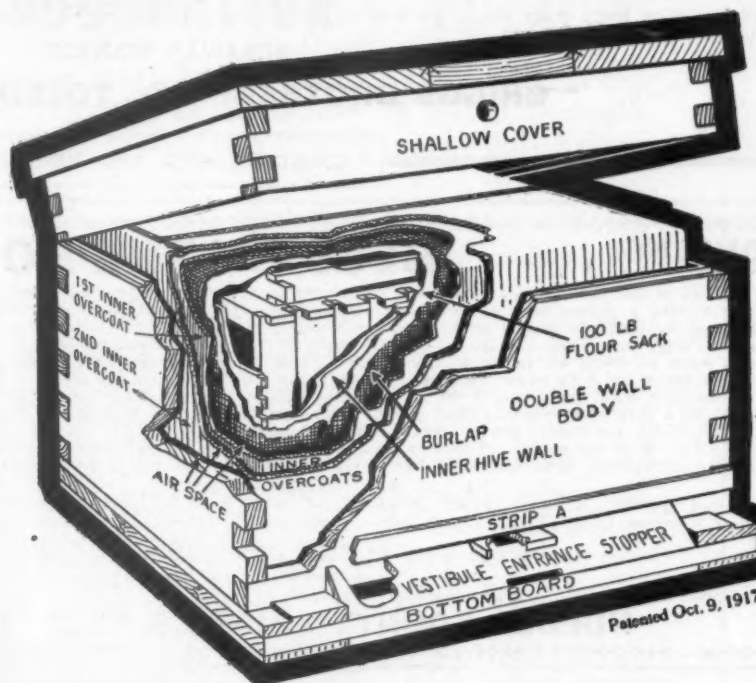
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AMERICAN BEE JOURNAL,
Hamilton, Illinois

WINTER PROBLEM SOLVED

—BY THE—

HIVE WITH AN INNER OVERCOAT



Patented Oct. 9, 1917

FURNISHED WITH JUMBO DEPTH OR STANDARD HOFFMAN FRAMES

Plan to try out a sample shipment of these hives the coming winter and be convinced of their efficiency and durability. Our winter's loss the past winter of 1919-20 was less than 5 per cent, and this was due to starvation and poor queens. The bees were confined to the hives without a flight for about 120 days. These hives will winter normal colonies perfectly under the most severe conditions. We have many testimonials, too numerous to publish. The two Inner Overcoats with intervening dead air spaces and inner covering or blankets close up about the brood-nest is what does the trick. A person could have any amount of blankets fastened up on the walls of a room and still freeze to death if left in the center of the room without close up protection or insulation. If you can eliminate your winter losses, think what it will mean to you.

Order early, as freight is slow and uncertain and will get more serious as winter approaches. Do not fail to try out a sample shipment. Catalog and special circulars sent on request.

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2½ lb., Friction Top cans, crates of 100	10 lb., Friction Top pails, cases of 6
2½ lb., Friction Top cans, crates of 450	10 lb., Friction Top pails, crates of 100
5 lb., Friction Top pails, crates of 12	60 lb., case, in cases of 1 and 2
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Ask for our special money-saving prices, stating quantity wanted.

A. G. WOODMAN CO.
GRAND RAPIDS, MICH., U. S. A.

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TOLEDO

NOW FOR THE 1920 HONEY CROP We will buy it, both comb and extracted

We want especially White Orange, White Sage, White Clover, Basswood, Raspberry. Write us what you have, sending samples, and prices asked, in first letter.

SECOND-HAND 60-Lb. CANS

These cans used only once, packed in good cases. 10 cases, 70c; 50 to 100 cases, 65c; 100 to 500, 60c.

BEEWAX WANTED**GRIGGS BROTHERS CO., TOLEDO, OHIO** DEPT-24

"GRIGGS SAVES YOU FREIGHT"

QUEENS**BEEES BY THE POUND****QUEENS**

The rush of our bee shipping season will practically be over by July 1st; will then be in position to take care of your QUEEN orders. Just received a picture from a party showing a colony built up from about 2 pounds of bees and a queen last spring (1919) and at that time weighed 380 pounds gross; others in the yard did better than that one. We have had colonies here gather 400 pounds spring crop. Party wrote from Chicago: "The shipment of bees was received on May 7, this year; hived same day; did not examine until 18th, when we found all queens accepted and had laid in three frames. We greatly appreciate receiving such good grade of bees and hope to favor you with larger orders in the future." Another from Nebraska: "Wish to tell you how well pleased I am with the business done with you. Some of the 50 packages had less than 100 dead bees in them. Those queens of yours are the best uniform QUEENS I have ever received. What is your price on 200 two-pound packages with queens for spring, 1921?" Our QUEENS are hardy, gentle Italians; they throw bees that fill the supers. GUARANTEE safe arrival and satisfaction on QUEENS. With my method of feeding, can ship bees successfully in July and August. Get a few packages and build them for the fall flow or winter. Send for FREE Circular giving reference, prices by parcel post, nuclei, guarantee, etc.

	1	6	12	50	100		1	6	12	50
Untested Queens	\$1.50	\$7.50	\$13.50	\$48.00	\$95.00	Tested Queens	2.50	13.50	27.00	110.00
Select Untested Queens	1.65	8.25	14.85	52.80	104.50	Select Tested Queens	3.00	16.20		
1 pound package bees, \$2.40; 25 or more, \$2.16 each 2 pound package bees, \$4.25; 25 or more, \$3.83 each 3 pound package bees, \$6.25; 25 or more, \$5.62 each										

Add price of queen wanted when ordering bees.

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We are at your service. Beeswax wanted at top market price.

SUPERIOR HONEY CO., Ogden, Utah

(Manufacturers of Weed Process Foundation)

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PRICES			
	June 15 to July 15	June 15 to July 15	June 15 to July 15
Untested	1	6	12
Select untested	\$1.50	\$8.00	\$15.00
	1.75	9.00	16.00
July 15 to Oct. 1			
Untested	1	6	12
Select untested	\$1.30	\$7.50	\$13.50
Select tested, any time	1.60	8.00	14.00
after June 20	3.00	16.00	29.00
Select day-old virgins,			
after June 1	.60	3.50	6.50
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Read what J. E. Paren, of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames and a great deal of other work. This winter we have a double amount of hives, etc., to make with this saw. It will do all you say of it." Catalog and price list free.

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How many of you, let me see, have tested out the Hand-Moore bee? Our bees get honey by the ton, and honey's what brings in the mon'. So if you want your honest share, and are not content with just the tare, buy Hand-Moore Queens, that's what I say, and do it, yes, and right away. Untested only, \$1.50 each; 6, 8.00; 12, \$15.00.

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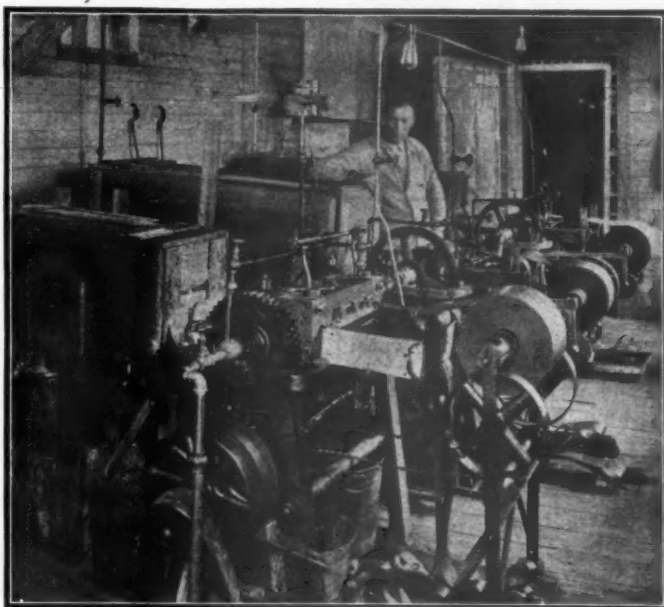
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SIZE	TUBES	SIZE	TUBES
30x3	5.40	34x4	8.65
30x3 1/2	6.40	34x4 1/2	9.90
31x3 1/2	6.65	36x4 1/2	10.90
32x3 1/2	6.90	36x4 1/2	11.40
31x4	7.90	36x5	12.40
32x4	8.15	36x5	12.60
33x4	8.40	37x5	12.65

Tubes Guaranteed Fresh Stock In order to state whether S. S. Clincher, plain or non-skid. Take 5 per cent discount from above prices for cash with order, or send \$2 deposit on each tire and \$1 on each tube, balance C. O. D. Tires shipped immediately subject to examination. ORDER TODAY. Serviceable Tire Corp., 171 E. 33rd St., Chicago

DADANT QUALITY IN MACHINE MADE FOUNDATION

The **Weed Process** was not invented in a single day. E. B. Weed who invented the present system of machinery on which **Dadant's Foundation** is manufactured made many experiments before he was successful.

Part of his experiments were made at the Dadant factory. Some of our older workmen can still recall the hot wax squirting every-



Sheeting wax on Weed Machines for milling into Dadant's Foundation

where from the jaws of different presses before the modern sheeting machine was finally evolved.

His process was promptly accepted by the Dadants as a step forward, not in the making of a foundation superior to the hand made, but of insuring quantities sufficient to supply an ever growing demand.

Into this process was carried all the care, all the pains, all the tests, which

had made **Dadant's Foundation** so well liked.

Nailing machines have largely replaced hammers, and trucks taken the place of horses and wagons, but the same care, the same exactness of having all foundation first of all satisfactory to the Dadants and to the Dadant bees is still exercised and will continue to be.

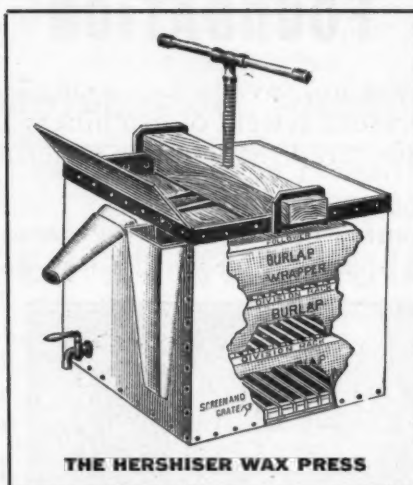
DADANT'S FOUNDATION EVERY INCH, EVERY POUND, EVERY TON EQUAL TO ANY SAMPLE WE HAVE EVER SENT OUT.

Specify it to your dealer. If he hasn't it write us

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This is because it is the most efficient wax extractor on the market which will handle quantities of old combs or cappings at one time. Less than one per cent of wax is left in the slumgum.

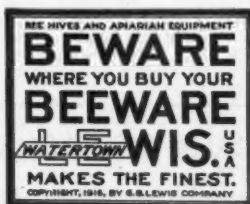
The Hersher wax extractor tank may be used to heat or liquify extracted honey, as it holds four 60-pound cans. Many beekeepers use it to drain cappings and to work wax into big cakes.

Sold by distributors of Lewis "Beeware."

Write for Free Booklet on this Press.

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BRANCHES AND DISTRIBUTORS EVERYWHERE



VOL. LX—NO. 9

HAMILTON, ILL., SEPTEMBER, 1920

MONTHLY, \$1.50 A YEAR

Requeening and Preparing for Winter

By C. P. Dadant

IF we have not done it earlier, September is a good month to requeen the colonies that have old queens. At this time, queens may be bought cheaper than at any other date during the entire honey season.

Some beekeepers advise requeening every year. I do not. I believe a queen is better in her second year, as a rule, than in her first season. If she was not good in her first year, she should have been replaced at once. But I would not have the heart to kill a queen, a year old, that was heading a strong colony. I could probably not do better by replacing her, then, and I might do worse.

Removing a queen to introduce another is considered a great task by some beekeepers. A French apiarist describes what he calls "the automatic finding of the queen." This consists in driving the bees into an empty upper story. When they are all there, he puts an excluder between the upper and lower stories and drives the bees back. The queen and the drones, of course, remain in the upper story. This will work and may be used in extreme cases, or with immovable combs, skeps, box hives or gums. But with a little care, the queen may be found, nine times out of ten, without so much disturbance. Smoke the bees sparingly, just enough to keep them from stinging; remove one of the outer combs to have plenty of room, put it away out of the reach of robbers, then lift the combs one after another, examining each comb first on the side away from you. The queen dislikes light and usually hurries to the other side of a comb as soon as exposed to the light. With a little practice, queens may be found in from 5 to 10 minutes. Italian bees are much better than common bees in this respect, since they do not rush from one comb to another as many of the blacks do. But the practical apiarist aims to keep only Italian bees. It is certainly profitable to do so.

To have good colonies for winter, we must have plenty of young bees. This is a requirement recognized by all teachers. September is the month in which to rear them. If we have a sufficient amount of super room and a vigorous queen, with the usual amount of harvest, there will be no trouble in having plenty of young bees. There are, however, two possibilities—too much or too little honey in the brood-chamber.

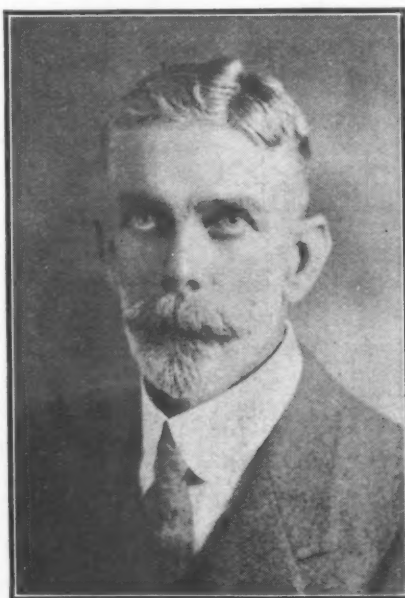
A crowded condition of the brood-chamber with honey, may not leave enough room for the queen to breed sufficiently. This happens often in the production of comb honey, especially when the month is cool. The bees have a tendency to crowd the cells with supplies. Then it is advis-

able to remove one or two of the fullest combs and give the colony some combs from weaker and less supplied hives. We may have divisions or colonies which were left queenless late, that need help. We will kill two birds with one stone by making the exchange.

Too little honey in the brood-chamber, in September, is often a characteristic of extracted honey production, with large hives. The colonies are strong, they are supplied with ample supers. They leave to their queen all the room she needs and, not foreseeing their owner's greed, they put all their honey in the supers. When the supers are removed, if we are not careful, we leave the brood-chamber with brood mainly, but with insufficient stores. To prevent this, in anticipation, we should crowd the colony a little for room, giving them a decreased amount of super room.

The novice will understand, from the above statements, that in any case, we must examine our hives previous to the end of the crop and supply them with whatever they appear to need. Even our most practical men are likely to neglect this work, thinking that, at the end of a good season, the bees will be sure to thrive. It is a matter upon which I cannot too much insist; for my bees have occasionally suffered from both extremes, too much wealth or too little.

In mentioning this matter, I am not speaking of the condition of abnormal colonies, which, of course, we would expect to look after, whether they had been queenless or had a bad queen, or had furnished bees or swarms. I am speaking of the usual average of good, honey-harvesting colonies, that would be generally expected to take care of themselves. Modern methods demand that we pay close attention to our bees, if we are to derive constant profit from them. The old let-alone ways will not prove profitable.



W. S. Pender, editor of "Australasian Beekeeper," of West Maitland, New South Wales, whose visit to Hamilton was mentioned in the July number of this Journal.

If we make sure of plenty of stores and plenty of brood in September, we will have the best possible conditions for wintering.

As to the methods of packing the bees for winter, I would prefer to leave that to each man, according to his experience. Cellar wintering is certainly excellent, wherever the winter is severe enough to keep the bees confined to the hive for more than four weeks at a stretch. But wherever the spells of cold weather are interspersed with occasional warm days, during which the bees can have a flight, it is best to winter out-of-doors. Packing the bees must be done early, so as not to disturb them during cold days.

Whatever we do, let us remember that a colony should not be compelled to winter with a lot of empty space at the side or at the top of the cluster. They need pure air, but should not be compelled to keep warm an amount of space which they do not occupy. I have heard of colonies wintering beautifully with 2 or 3 empty supers right above the brood-combs. But I conjecture that they would have saved a great deal of honey and many bees if there had been a chaff cushion right over the brood-frames. It is the same with empty frames at the side. If we remove the dry frames, use a division board, and fill the space outside of it with some dry, non-conducting material, our bees will have just so much better chance to keep warm.

These directions are intended for the average Middle States conditions of fall and winter. But the man in the South cannot lose anything by looking after wintering conditions, even if his winter problem is of less magnitude than ours.

The quality of the honey which our

bees have in the brood-chamber for winter, has much influence upon the result. Honeydew, sorghum juice, apple or grape juice are well-known as fatal to the bees, in long confinements. In 1879, we were cursed by those of our neighbors who had vineyards and cider or wine presses. Our bees had about sufficient stores, but September was a bad month and, as they had nothing to gather in honey, they stored a lot of grape and apple juice and greatly annoyed the neighbors. The result was that, instead of making a profit from our neighbors' fruit, as they suspected us of getting, we lost bees heavily during the cold weather. But our evident ill-luck pacified those who had accused us of making an unfair profit. All that fruit juice should have been extracted before winter.

The Monthly Crop Reporter of the United States, for May, 1920, gives out a winter loss of over 14 per cent, average, on bees in the United States, for the past winter, the heaviest loss having been sustained in Connecticut, with an average in that State of 39 per cent. We should improve upon this, and it will be done, if the beekeepers prepare their bees in advance, in accordance with the requirements that past experience indicates.

ARRANGEMENT OF COLONIES IN THE APIARY

Written by Dr. C. C. Miller on his 89th anniversary

In "Arrangement of Colonies in the Apiary," page 194, do you think you sufficiently emphasize the advantage of putting hives in pairs in order to get a large number on a given space? To be sure, you speak of the Maquoketa apiary, and say, "two hives being generally placed very close together,

with a greater space between them and the next." But it is well to tell the beginner plainly, "Set your hives in pairs and you may double the number on the same space." Suppose you have a row of hives uniformly spaced, like upper figure in diagram.

If now you set another hive by the side of each of these, you have doubled the number of hives without at all increasing the danger of having bees enter the wrong hive, as second row in diagram.

A bee belonging to No. 5 knows its hive as being at the left side, and if it enters a wrong hive at all it will be more likely to be No. 3 or No. 7 than No. 6, because 3 and 7 are left-hand hives like its own.

The ground occupied by the 160 hives in the Maquoketa apiary was 50x65 feet, or 3,250 square feet. That was 20.31 square feet for each hive.

Now suppose we put them in pairs in straight rows, each two rows back to back, as lower figures illustrate:

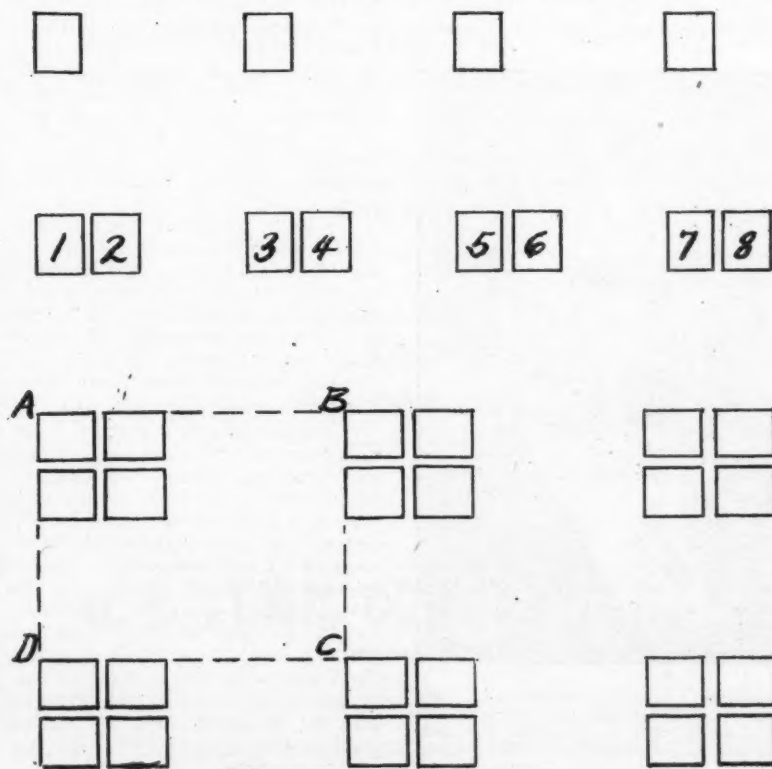
The parallel ABCD represents the space occupied by each group of four hives. There will probably be no undue crowding if the line AD be 5 feet long and the line AB 10 feet long. That makes 50 square feet for 4 hives, or 12.5 feet per hive, or 62 per cent more hives on the same ground than allowed at Maquoketa.

Of course irregularity makes for safety, but when Missouri wants to occupy a limited space he may safely be told to put his hives in pairs, in straight rows, two rows back to back.

While it is true, as said on page 193, that "Long rows with exactly uniform spacing, are most objectionable," putting in pairs, and putting rows back to back takes away most of the objection. A very little trouble will still further work for safety. Bees note very small landmarks, and a fence-post or a little tree 5 feet high, here and there, will be a great help in marking locations.

I can speak approvingly of this plan of placing hives after having given it an actual trial for 40 years, only, having room by the acre, I allowed a space of 14 feet between the two double rows of hives. Likely this is no better for the bees, but pleasanter for the beekeeper.

In the American Bee Journal for July, page 226, Dr. G. F. White speaks of an arrangement in which "hives placed in pairs alternate with a single one. I think I never saw this plan mentioned before. It will not allow quite the same number of hives to be crowded upon the same area, as compared with the plan of having all hives in pairs, but is considerably safer against having queens or workers enter wrong hives. When all hives in the row are in pairs, the bees of No. 5, for instance, are not likely to make the mistake of entering their nearest neighbor, No. 6, but are more likely to enter No. 3 or No. 7. Now suppose the hives are 17 inches wide, with 2 inches between the two hives of each pair, and a sitting-room of 24 inches between the pairs. That will make the bees of No. 5 go 60 inches to enter either No. 3 or No. 7. Suppose, again, that pairs alternate with



Different plans of apiary arrangement.

single hives, with the same spacing as before. If the bees of No 5 enter a wrong hive, it will most likely be No. 2 or No. 8, because these are the nearest hives that resemble No. 6 in appearance, and the distance from No. 5 to either of these is 101 inches. So the plan given by Dr. White is 68 per cent safer than to have all in pairs. Worth considering.

There, I've said more than I intended when I started in on that, but perhaps it may be of enough importance to print. Anyway, you mustn't blame me if I talk a good deal today, for I never was 89 years old before.

AN OLD-TIME METHOD OF SHIPPING BEES

Through the kindness of M. H. Fairbanks, of Homer, N. Y., we are able to reproduce the following account of the manner of shipping bees to California in an early day. The clipping is from an old copy of the *American Agriculturist*. Although the date had been cut off, it apparently appeared in the days of Harbison:

Transporting Bees

"Large shipments of bees have been recently made to California, and the demand for the Pacific Coast, as well as down the Atlantic, and other distant points, is increasing. Several inquiries have been addressed to us for information, as to the best mode of preparing them for transportation, when to be carried over the water, and especially when to be subjected to a change of climate in passing through the tropics. We cannot better answer these queries than to give the accompanying illustration, which we sketched from one of a lot of hives passing through this city on its way to California. The hive was of the common box form, having drawers at the top. A narrow strip of board was nailed upon each of the four corners, which projected down about 6 inches below the bottom of the hive, to form temporary legs. Over the open bottom of the hive a sheet of wire-cloth was nailed, its edges being bent up, and tacked to the edge all around. This formed an open-work box, hanging down some 4 inches, or within 2 inches of the bottom of the temporary legs. The drawers were removed and wire-cloth nailed over. This arrangement secures free ventilation and access to air and light, without allowing the bees to escape. When carried on land, the hives were turned upward, but when taken on shipboard, they were set in their natural position. We learn that by this arrangement there has been little loss among the hundreds of swarms that have gone to California during the past four months."

TWO QUEENS IN ONE HIVE

By George B. Dickerson

I had an experience last summer which perplexed me very much at the time, and I have wondered many times since if other beekeepers have ever noticed a parallel case.

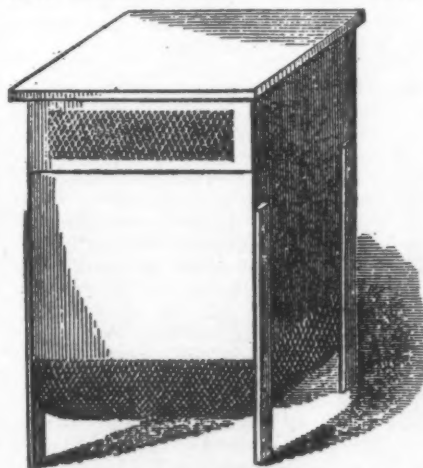
Where I have my home the bee range is pretty well crowded, so I

keep only about a dozen stands there and have a couple of outyards, one about five miles and the other about eight.

Last May, in the 5-mile apiary, I ran onto a case of European foul-brood. So I promptly killed the queen, which, by the way, was small and black, and proceeded to treat the colony. After a few days, of course, I removed the queen-cells and was careful to get them all, too. After several days I put in two ripe cells from a choice golden Italian I had at another apiary. I put in two because I had just two left, and no place to put them. Along in June I looked in the hive and found brood in all stages and plenty of it, and a fine looking golden queen. When I saw the queen I stopped looking, closed the hive and left it so until late in August, when I decided to get all the goldens out of that yard and replace them with leather-colored. I took the queen from this hive back home and put her in a queen-mating nucleus to keep until I should find use for her elsewhere, and placed in the hive a caged queen to be released by the bees, as per regulation.

On returning six days later the queen in the cage was not released and in fact they had tried to smother her by sticking up the screen. Being surprised, I started looking through the brood-chamber and found brood from eggs up. On the second frame I took up was a fine large golden queen which looked just like the other one I had taken out. At first I thought the queen had left the nucleus and come back to her old home. I had heard of such things, but had never seen it, besides the distance was too great I thought. Well, I went over and looked and she was right where I had left her, so I had an extra queen. I can't see any other way but they both came out of the cells, mated and worked side by side in the same hive for over two months, which is, according to my experience and observation, very much against the nature of the "beast."

My hives are all numbered and when I work a stand I make a notation on the cover of the work and date, which I copy in a small note



Box used for shipping bees to the Pacific Coast in the days of Harbison.

book which I keep for that purpose, before leaving the yard. As all the records correspond in every detail I can't see any chance for an error on my part.

Someone else come along with your experience along these lines.

El Cajon, Calif.

TAKING GRANULATED HONEY FROM BARRELS

By C. P. Dadant

"As Mr. Dadant has used barrels for years, I would like to see an article from him on how to get honey out of the barrels when it is granulated. Did you ever try to heat the barrel to melt the honey?"

New York. G. W. HAINES.

Answer. No, I never tried to heat the barrel. As wood is a non-conductor of heat, it might be a slow job.

If you expect your honey to granulate in the barrels, it is best to have them standing on end at the time of granulation, though it is not indispensable. If you have one end up, whatever there may be of foam, of impurities, particles of wax, etc., will be at the top, and as the barrel is never filled entirely, the head will not touch the honey. It is a little more difficult to remove when it touches the granulated honey.

Mark your barrel head and the stave ends with a pencil or a crayon in two places, so that you may be able to replace the head in exactly the same spot. Have a large gimlet screwed into the center of the head for a handle. Let the head be carefully cleaned, so no dirt will fall in. Remove the hoops after having marked them also with a crayon so they may be replaced in exactly the same position. When the last hoop is taken off it may be necessary to keep it at the top, to hold the staves together. The lower hoops, of course, are not touched. If the staves do not separate from the honey, they may be spread with a wooden mallet.

When the head is lifted out, fasten down one of the hoops to hold the barrel together.

To remove the honey, we use a clean, new spade. We have found nothing better. A spade will readily cut out the hardest granulated honey.

When the honey has all been removed, put the head back by holding it, with the help of the gimlet, in its proper place, taking care to fit it exactly where it was before, as the crayon marks or pencil marks will indicate. Then drive the hoops also in exactly the same places. If the job is done properly, the barrel will be as good as ever to use for honey. We have used some barrels many times over. But when you do not take precautions to put the head back in exactly the same position, the possible irregularities in it may cause it to leak, next time.

Never soak a honey barrel with water. Never put hot honey in a barrel. If you want to put the honey back in the same barrel, you should allow it to cool after melting it. We have often taken honey out, melted it and put it back in for shipment, without the least trouble.

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THE EDITOR'S VIEWPOINT

Good Samaritan Fund

The fund for the Franco-Belgian beekeepers has been somewhat neglected during the busy season. But as the crop is being harvested, many of our beekeepers remember that there is still a great deal of suffering across the ocean. So we are beginning again to receive help. The following has been received:

Third list, begun in May	\$46.50
L. W. Derrin, Cushman, Ore.	2.50
Montgomery Co., Pa. beekeepers	5.00
Orange Co., Calif., beekeepers	25.00
Chas. A. Brown, Piru, Calif.	50.00
Geo. S. Demuth, Washington, D. C.	10.00

To date \$139.00

Only a few of the queens subscribed were sent over, owing to the irregularity of transportation and dangers of loss. So the queens subscribed are being sold and in some future number we will give a list of the amounts. Meanwhile, we hope County and State Associations will follow the example of the Orange County, Calif., and Montgomery County, Pa., beekeepers. Each \$100 is worth 1,300 francs in French values and a trifle less in Belgian values, and our friends over there are putting the funds to good use. Statements will be made when the work is done, to show where the help went.

How Many Visits to the Pound

We read that a beekeeper has figured out that the bee must insert its proboscis into 2,500,000 tubes of clover blossoms in order to secure a pound of honey. It would be interesting to know just how he arrived at the number. It would be rather laborious to count them. Anyway, it is quite probable that the number would vary somewhat under different conditions.

Another Newspaper Selling Honey

After the big sale of honey by a New York newspaper last winter, we are not surprised to learn that the Kansas City Post has shipped a quantity of comb honey in from the west and has been selling it direct to its readers. The only danger of such campaigns lies in the fact that those who buy the honey shipped in large amounts and sold at cost by the news-

paper, may regard the grocer who must add a reasonable profit for handling, and who, in many cases, buys at a higher price from the wholesaler, as a profiteer. The newspapers buy direct from producers, in large quantities, and give their readers the full benefit of the saving. Many new customers are made for the beekeepers' product by such campaigns.

Bees in a Shoe Box

In an old copy of "Progressive Beekeeper" is an account of a queen with attendants shipped by mail in a defective cage. Two of the worker bees escaped while on the journey, but were caught by a mail clerk and placed in a shoe box in which some holes were punched to give them air. The queen, with the remaining workers, went through safely in the cage and the workers which escaped, in the shoe box.

If present-day express messengers and mail clerks would display similar interest in getting package bees and queens safely to their destination there would be far less complaint against the shippers.

Demonstration Meeting

A. L. Kildow, State Inspector, announces a demonstration meeting for beekeepers at his home at Putnam, Ill., on September 10. Dr. Baxter, Professor Flint, H. H. Park, Assistant Secretary of Agriculture, and the editor of this Journal are announced to appear on the program.

New Law for Georgia

The apiary inspection bill drafted by the members of the Georgia Beekeepers' Association and presented by J. E. Bowden, of Waycross, has been passed by both the Senate and House of the Georgia Legislature and has gone to the Governor for his signature, required to make the measure a law. The association is to be congratulated on its success, since the organization was perfected, the opinion crystallized, the law drafted and passed all within one month. This young and lusty organization, which has made its voice heard imperatively in Georgia legislative halls is headed by J. J. Wilder, who was chosen to be its first President, at the annual meeting. Commissioner J. J. Brown,

of the Department of Agriculture, Atlanta, whose office will have charge of apiary inspection enforcement, is actively behind the bill, and no doubt has been expressed that the Governor will sign the bill.

Paper Still Going Up

At a time when we had hoped for falling prices, the tendency of paper is in the other direction. For months past we have met with one raise after another, each time fondly hoping that it would be the last and that prices would soon begin going down. In a recent issue we mentioned our problem under the title "Troubles of a Publisher." Since that time new rises in the paper market have taken place and a trade journal announces still another 4 cents per pound in the kind of paper we use. If this latest rise goes into effect it will add 12 cents per year to the cost of paper for the Journal for every subscriber. A greatly increased freight rate will be in effect by the time this number reaches our readers and the increased rate will make every item entering into the Journal cost us more. Higher wages for printers and binders, increased cost of paper, ink and engravings have increased the cost of getting out the Journal to such a point that we can see no other way to continue getting out the same quality of Journal except to increase the subscription price. We have tried every means at our command to avoid such a raise, in the hope that the high prices would come down. We are informed by those familiar with the paper trade that cheap paper cannot be expected again, because the forests that supply the wood pulp are constantly getting smaller and that things made from wood must continue high in price.

We do not wish to reduce the size of the Journal nor the quality of our reading matter. In order to give all our present subscribers due notice of the advance, it will not go into effect until October 15. Until that date subscriptions will be accepted at \$1 per year. After October 15 the price will be \$1.50 per year.

In Michigan

As promised, on page 228 of the July number, I managed to go to the two Michigan meetings of July last. It was delightful. Michigan has many fine roads, on the north end of the southern peninsula. The weather is much more pleasant than summer weather in the Mississippi Valley, and beekeepers are numerous. The milkweed is a splendid honey plant, and although its "milk" is rather an objection, its honey is fine. Wife and I spent four weeks at Bay View and vicinity, on Little Traverse Bay, where a "Summer Assembly" carries on a continuous summer course and Chautauqua. I don't know of a more enjoyable spot for elderly people and even for young people who can be satisfied with base ball, basket ball, tennis, croquet, golf, a little fishing, and going back and forth among summer resorts where there are no mountains to climb and no exertions.

Oakland County, Michigan, is mentioned as a lively county. They have a meeting of beekeepers nearly every month, and with good attendance. D. A. Davis is their President. They say much of the enthusiasm in that county, for bees, is due to the influence and earnestness of Miss Abbie Sly, a lady of wonderful activity.

Michigan has many young men of promise. The State that produced Dr. A. J. Cook is now encouraging young men like P. T. Ulman and R. H. Kelty. Ulman was in the A. E. F. and is working hard now at spreading information on bees. Kelty is Secretary of the State Association. He is only 23, but is already making interesting microscopical studies of bees and diseases of bees. At the Huron County meeting he took samples of diseased brood from a comb and in a very few minutes had a microscopic display of *Bacillus larvæ*, showing very plainly American foulbrood. We need many such men and they should be encouraged, at any cost. There is so much room still for discoveries.

The meeting of Huron County, at the home of David Running, was attended by about 75. A demonstration of practical and profitable beekeeping with 8-frame Langstroth hives, was given in the apiary. By an ingenious management of bees, after a variation of the Demaree plan, Mr. Running succeeds in getting a fine crop of honey from "3-pound packages" of bees received May 12. He had as many as 6 8-frame stories occupied with bees, brood and honey. He is certainly very successful, the only drawback being the large amount of work required to keep 300 colonies under this management, as every colony must be examined at least as often as once in 10 days, to keep down the swarming fever.

Mr. Running has proven to his satisfaction that when the brood is put up at least 3 stories removed from the queen and the queen is confined to the lowest story by an excluder, the young queen hatches above and, if she has been given a separate entrance, will often be mated and will begin laying without interference from the workers, who seem to consider this remote apartment as a separate brood-chamber. Then there is no danger of swarming.

David Running's large experience with 2 and 3-pound packages, for several years past, indicates that queens sent with the bees should be caged in such a manner that the bees cannot release them during the trip. On arrival, after the bees are hived, the candy end of the cage should be uncovered and a toothpick or a match forced through the candy to help the bees in releasing her. There is no loss of queen when this method is followed. The attention of both shippers and buyers is called to this advice, which is based on protracted experience, by an attentive man.

Michigan has some wonderfully lonely spots. Between Alba and

Frederick, in the middle north of the peninsula, is a station called "Mancelona Road." It is in the center of an immense burnt over plain, where grow ferns and endless thickets of red raspberries. There is neither station, depot nor village—absolutely nothing but a wagon road crossing the track, and winding around in the sand. I am told there are dozens of such "stations" in northern Michigan. Splendid places to keep bees and harvest raspberry honey. But when one considers the loneliness of such spots, one wonders whether it is worth while to keep bees so far away from the comforts of life. Not a neighbor for miles and miles.

Propolis for Stopping Leaks in Tin

Years ago, when we first used tins for honey, I found it a great annoyance to empty a leaky can of its honey and to repair it. I tried beeswax, but it would not stick. Mixing a little tallow or grease with the wax made a good mixture and I have used this at all times to stop a leak, if small enough, in a filled honey can. Now I find, in the "Bulletin de la Societe d'Apiculture de la Meuse" for November last, the recommendation of using propolis for this purpose. As every beekeeper always has propolis handy, it is a good suggestion.

At the meeting of Michigan's State Beekeepers' Association, in Boyne City, Hon. Colin P. Campbell, of Grand Rapids, called the attention of the beekeepers to the great amount of honey which is still wasted in Michigan for want of bees to harvest it, which has been estimated at fourteen million pounds each year. Many farmers make fruitless efforts to destroy the milkweed in their pastures, while this same milkweed would give them a profitable income in fine honey.

W. D. Achord, of Alabama, was present at the Michigan meeting and explained some of the troubles that meet the shipper of bees by the pound in the South, every spring. Every northern buyer wants his bees at about the same date, and this is next to impossible to achieve. One of the great troubles of shippers is the fact that it is quite warm in the South and cool in the North when the bees are shipped. They need shade, on the way, but many express agents or mail agents, regardless of instructions, leave the cages containing them for hours in the sun, at connecting stations, thus causing the death of bees which the shipper has to stand. This delays delivery of orders, since more bees must be furnished than expected.

The Michigan Meeting

The meeting at Boyne City was well attended, over 100 being present. Many came there from all parts of the State in their autos. The roads of Michigan should put to shame the roads of Illinois. It is true that Michigan has better soil for roads. But they spend millions for a bituminous covering which appears to be

mainly "Tarvia" and this covering would be about as serviceable on dirt roads, if properly graded, as on gravel roads.

One of the leading features of the Michigan meeting was the approval given to the American Honey Producers' League. It was voted to join it, and as the State Association did not have sufficient funds in its treasury to pay the \$100 required, a collection was taken up and the \$100 subscribed in a very short time. That is the right spirit, and Michigan is demonstrating that the State which produced such beekeepers as A. J. Cook, W. Z. Hutchinson, T. F. Bingham, James Heddon, R. L. Taylor and many others, cannot show the white feather in a matter of national interest. It may take some time to line up the majority of our State Associations in favor of the American Honey Producers' League, but sooner or later it will be done. Efficient service can hardly be expected unless this comes about.

The program was very full, in spite of the failure in attendance of some desirable men, such as Mr. Rattray, of the Domestic Beekeeper; Mr. Elmer Hutchinson and Mr. Townsend. The latter was present the first day, but did not remain long enough to give the expected address.

The citizens of Boyne City helped to diversify the program by furnishing automobiles to take a 50-mile trip in the late afternoon to visit the marvelous experimental stock farm which is said to have cost three million dollars to establish. The second day another trip was made to two apiaries and the central plant of E. E. Coveyou, where actual proofs were given of a fine honey yield from clover and milkweed.

The meeting next summer will be at Alpena, on Lake Huron.

Mr. Frank Moore, of Newaygo, Mich., uses propolis, heated, to fill cracks or knot holes in defective lumber in beehives. He presses it in thoroughly and then paints it over, and says that hives finished in that way are as good as those made of clear lumber. They must be.

If you ship honey in 60-lb. cans use strong cans and strong cases, says E. R. Root, as this may save loss of honey, and is sure to secure better condition on delivery. The saving is greater than the extra cost.

Disgusted With Honey

At Bay View, we met a lady who had been very fond of honey. But accidentally, she saw, in an exhibition, a comb with bees on it, in an observing hive. She said: "I was very fond of honey, but when I saw all those flies on that honey, tramping around, it disgusted me. I can't eat honey any longer. I did not know that honey was made that way."

E. R. Root advises the shipping of pound bees on strongly wired frames of foundation, and reports that he has known bees thus shipped to work the foundation into comb while in transit.

Attractions of the Central Extracting Plant

How one Ontario Beekeeper Handles the Output of Seven Yards with one Honey House and Outfit

By Frank C. Pellett

WHEN the writer started for Ontario in June, he had visions of seeing a number of Canada's most extensive honey producers in action. The trip was to include a week at the short course at Guelph and a week among the beekeepers. The visit was at an unfortunate time as far as the weather was concerned. The rain, itself, was fortunate, for the spring had been rather dry and the prospect was not the best. Coming as it did the heavy rainfall insured a crop, and so, of course, was very welcome. However, there is little chance to see beekeeping operations during a heavy down-pour, and with one exception the visits to extensive honey producers were either impossible or it rained so hard that there was no chance to visit the apiaries.

The one exception was the visit to the Pettit apiaries at Georgetown. The day was fine and the bees were working hard, so conditions could hardly have been better in this case. Mr. Pettit is too well known to require introduction. His work as founder of the beekeeping department of the Ontario College of Agriculture has already introduced him to every student of beekeeping. It is now more than two years since he decided to give up public work and devote his entire attention to the Pettit apiaries, which are operated in partnership with his sister. The apiaries were established several years ago by Miss Pettit, while Mr. Pettit was at the college.

One thing which impressed the writer was the great care they use in selecting their combs. Any comb which sags, has a considerable portion of drone comb, or is irregular in its shape is marked "No. 2" and discarded at the first opportunity. No. 2

combs are used in the extracting supers until such times as they can be spared. The photo herewith shows that with properly wired combs there is little sag, and it is possible to get brood clear to the topbar. Most beekeepers appreciate the value of perfect combs, but too often few take the trouble necessary to replace all the defective ones.

The Pettits seem to be willing to "try anything once," to repeat a common expression. One is impressed with the number of experiments which they must have tried in working out their present system of management. One apiary is in single packing cases, another in quadruple winter cases and at a third the bees are wintered in cases holding eight

colonies, etc. The winter problem seems to be of little concern to them. In spite of the extremely hard winter of 1919-20 they wintered with very little loss except in one apiary. Mr. Pettit can only explain the loss in this instance by the lack of proper air drainage.

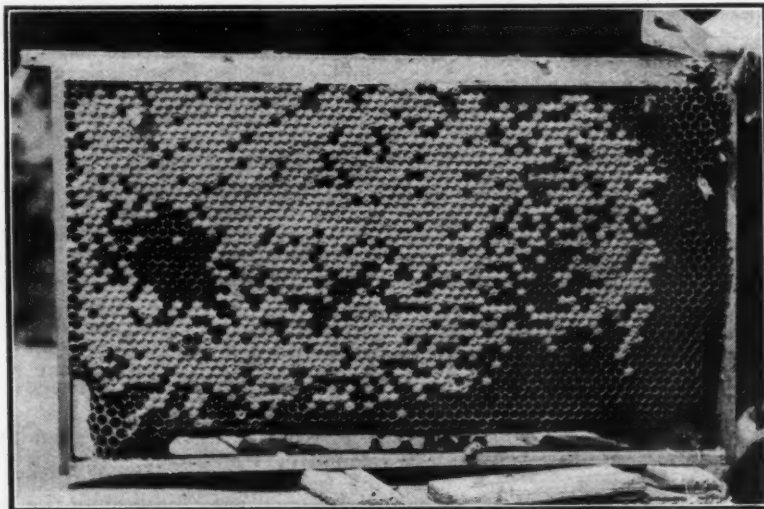
They make a practice of wintering on sugar syrup, owing to the uncertainty of the quality of natural stores. In Ontario the winters are long, and there may be weeks of time when the bees are unable to fly. Since all their bees are wintered outside, it is important that the bees be provided with the very best stores. Given an abundance of sugar syrup, large clusters of young bees and plenty of packing, they find their bees to winter almost perfectly. In fact, for several years past they have packed the bees in the fall and spent the winter in Florida.

The Pettits are enthusiastic about the advantages of a central plant. As will be seen by the illustration, the building is large enough to house all equipment necessary for the seven yards. The loaded truck is driven directly into the building, which is bee tight, thus avoiding any annoyance from robbers while being unloaded.

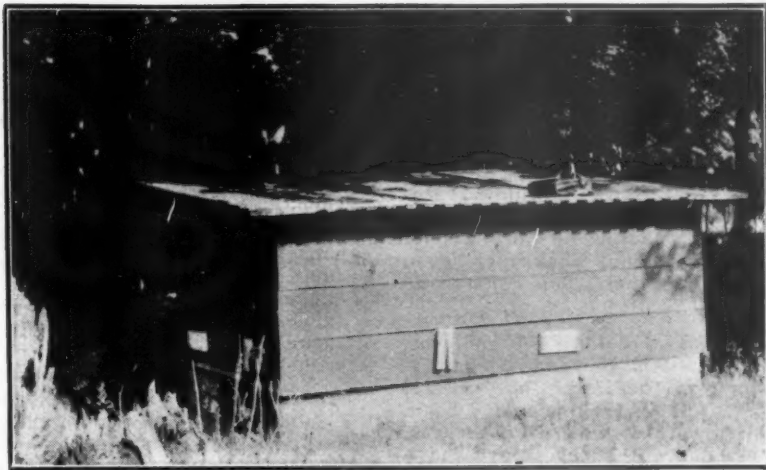
They contend that one fully equipped building is more economical, as well as more satisfactory, than a makeshift building at each yard. Few beekeepers own the sites of their outyards, and that being the case it would hardly be wise, even though the cost was not prohibitive, to erect a well-equipped, permanent building at each yard. Where the beekeeper has no buildings it is a simple matter



The central plant. Mr. and Miss Pettit in foreground.



Brood to topbar in carefully wired comb.



One yard is wintered in cases holding eight colonies each.

to move an apiary. It often happens that outyards are left to remain in poor locations when better ones are within reach, because of the fact that there has been a considerable outlay for honey houses, which are not easy to move.

Mr. Pettit says: "After several years of moving machinery, first the hand extractor and capping can in a one-horse wagon, then the power extractor, engine and capping melter with a team, and later in a motor truck, I have become a convert to the central apiary building idea." He argues that the central plant has the following advantages: Less expense for equipment, less wear on machinery, better machinery is used, more honey is extracted each day, extracting and packing is done at home, honey can remain longer in settling tanks, thus making a finer appearance when packed, and finally, at the end of the season, all equipment is at home, where it can be looked after properly.

Advocates of an outfit for each yard or a portable outfit to be carried from place to place will be able to advance a number of arguments to offset these advantages. However, the writer has not yet found an extensive beekeeper who, after giving the central plant a thorough trial, is not satisfied that it is the better plan.

The Pettit building is 24x40 feet, two stories high. The lower story has a concrete foundation, which serves the double purpose of providing a suitable support for the building and equipment and at the same time making it proof against rats and mice. The lower story is divided into three rooms, one for the truck, one for extracting and the third for honey storage. The building is provided with an ample water supply and is connected with the sewer. It is thus possible to clean all floors and equipment thoroughly after extracting and let the wash water run directly into the sewer through a bell trap in the center of the floor. Upstairs there is a cozy office and study, a store room and work room for nailing up supplies, etc., and a lavatory with bath where the men can clean up after the day's work.

The honey is extracted with a

power extractor and carried directly to the tanks by a honey pump. Although the Pettits use a steam knife, they do not use the Bingham curved handle knife in general use. Instead they use a straight knife with blade about 10 inches long. Mr. Pettit argues that the straight knife with long blade has some decided advantages over the other.

The beekeeper has been a little slow to adopt modern improvements to his business, but electricity, gasoline and steam are all helping to save labor in the production of honey on a large scale.

WILD BEES

Locations Selected by Swarms Left to Themselves

By V. Dumas

The scarcity of bees in France during the past few years has caused me to look for bees, in the wild state, or ill-located, as we see it. In France, it is common to believe that anything which is out of the ordinary belongs only to the New World, that the business of a bee-hunter is applicable only to the virgin forests of America. Yet within a radius of only 12 kilometers (8 miles), around my home, I have been able to secure, in 2 years, over a hundred colonies, for myself or for

others. About another hundred, which I discovered, were not taken out, on account of the refusal of the owner. It is evident to me that, if my example could be followed, throughout France, we could partly restore our beekeeping, damaged because of the war.

This bee hunting gave me the opportunity of making divers notes concerning the debated points, on the influence upon the yield of the following conditions:

1. Capacity of the hive.
2. The position of the entrance, as regards the cardinal points.
3. Its position at the top or bottom.
4. Exposure to air and weather.
5. Position of the combs across or lengthwise of the entrance.
6. Size and temper of the bees.
7. Size of their combs.
8. Average of honey yield.

I do not claim to settle, through my observations, every one of these points. But experiments upon colonies located according to their choice, without either influence, must have some value.

The locations occupied by runaway swarms, in my locality, are not very varied. I found them as follows:

Between the floor and ceiling of a house	40
Between shutters and window.....	16
Within the flue of a chimney.....	12
In walls, hollow stone walls	8
In hollow trees	8
Between roof and ceiling (attic)....	8
In the mantel-piece of chimney....	6

1. I found powerful colonies in each of these positions. But the space available, in each case, appeared to have great influence upon the development of each colony. The most powerful one was located in a great window frame (In France, the window embrasures are very deep, because of the thickness of stone walls, from 18 to 24 inches.—Editor), the weakest in a very small hole in a wall.

2. The orientation of the flight holes was as follows:

To the south	40
To the east	20
To the north	12
To the west	12
In vertical position	16

In every exposure I found power-



Hives arranged in groups of eight when big packing cases are used.

ful colonies. The strongest one was facing south. But it is impossible to establish any conclusion from this, the colonies being in more or less favored locations.

3. Position of the combs in regard to the entrance.

Combs below entrance 80
Combs with entrance in middle... 10
Combs with entrance below 10

In most cases the position of the combs was a matter of chance, outside of the bees' choice. No deduction can be drawn from this.

4. Exposure to air and weather. It is difficult to establish a comparison in this. The most powerful colonies were the most exposed, having ample space and openings, but it seemed as if their harvest suffered from too great exposure, requiring more consumption to keep up the warmth of the brood-nest. Colonies that were exposed to drafts and rain, in the flues of chimneys, were in very good shape. Probably in a more rigorous climate they would have suffered more. The top of their combs was woven together, black and dry, perhaps from occasional sun rays striking them. This created a felt-like condition of the top of the combs which made an appreciable shelter.

5. Direction of the combs as regards the entrance:

Away from the entrance 90
Crosswise of it 10

As the bees have evidently the choice as to the direction of their combs, it is clear that they prefer that the passages between the combs face the entrance. However, I found one colony in a wide-open wall with the rear combs crosswise of the opening, while the front combs were

built the cold way. (In Europe, combs built crosswise of the entrance are called "warm combs" while those built at right angles to it are "cold combs."—Editor). This appeared to me rather incongruous. But my liking of the honeybee does not cause me to accept it as the marvelous insect, with infallible foresight, celebrated by Maeterlinck. Perhaps one cannot be both a poet and a professional beekeeper, even if one can be either. This colony was weak.

The strongest colony I found was, as I said, in a large window embrasure, open at the lower end, with a hole about the size of a man's head, but hermetically closed otherwise. The swarm of bees must have weighed 18 to 22 pounds. An excess of air appears to be an element of stimulation for breeding, in quantity, but of course not in precocity.

6. The size of the bees appears to me to have little if any influence upon their yielding qualities. The advantage, if any, appears to be in favor of the smaller size. On the two sides of a flue, between the flue and the chimney mantel, I found two colonies that had to travel through a wall about 2 feet in thickness for their ingress and egress, along a wooden beam. But on the fireside face they could freely communicate with each other. One of those colonies was composed of common black bees, while the other was a race of smaller bees, such as the African Punics, which are rare in this part of the world. The latter were the more active and had a greater quantity of honey. They are also more aggressive. The percentage was as follows:

Common black bees 92

Hybrids or Italian bees 6
Small blacks or Punics 2

7. Size of combs.

Height of Combs	Horizontal Length	No. of Colonies
4 inches.....	16 inches.....	20
4 inches.....	24 inches.....	6
6 inches.....	8 inches.....	6
6 inches.....	16 inches.....	10
7 inches.....	16 inches.....	8
11 inches.....	17 inches.....	10
20 inches.....	12 inches.....	16
32 inches.....	12 inches.....	12
32 inches.....	28 inches.....	1
48 inches.....	12 inches.....	10
80 inches.....	6 inches.....	1

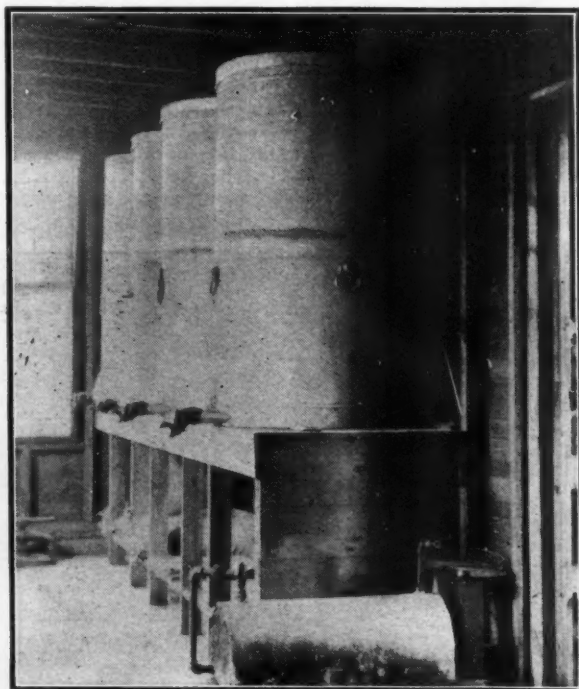
In this case, also, we cannot decide the choice of the bees as to the preferred sizes, since the walls of the cavity limit them. I found as large crops in hives whose combs were only 4 inches high by 16 to 24 inches in width as in hives the combs of which were 4 feet in length. However, the very largest amount of honey was found in a colony whose combs were approximately 11x17 inches. This is the size of the combs which I use in my apiaries, the Dand-Blatt hives. I rather pleased me to find it thus in a natural state.

Although foulbrood is in existence in my country, I did not discover a single case of it in the colonies which I thus handled. It induces me to believe that foulbrood is not so readily transmitted by robbing as we are apt to think.

As to the quantity of honey secured from these different colonies, it would be useless to report it, as they were found and handled at various dates, from April to October; the amount of stores necessarily differing at different dates, and in different locations. But I have verified the legendary nature of the prodigious stories reported at times by our country folks. I remember reading the report of a wonderful colony of bees located under the arch of a viaduct, the weight of whose honey was endangering the safety of the stone structure. The popular belief, in immense stores of honey, is due to the idea of some people that a colony of bees, left to its own devices, continues to increase its stores from year to year. So if a countryman estimates that a swarm of bees has inhabited a cavity for 10, 50 or 100 years without anything having ever been taken from it, he will multiply its probable annual harvest by 10, 50 or 100, as the case may be, and expect to find it all stored away. Hence the stories of barrels of honey taken out of old buildings by stone masons repairing the walls.

Facts always contradict these phenomenal yields. From some old chateaux walls, out of church attics, I have removed bees that were reported as having been there from immemorial times and the largest amount I secured in any one case was 121 pounds. So our colonies in domesticity, hived in well-managed apiaries, sheltered from the weather and the rats, are evidently more productive.

Florida Rucher, Mervilla, France.



Storage tanks at Pettit plant.

INSECTICIDES

By A. F. Bonney

I have devoted a great deal of attention to the question of insecticides, and in connection with the letter from Mr. Francis, head chemist for Park, Davis & Co., of Detroit, Mich., propose to give the result of many experiments.

One of the very best insecticides I ever found was permanganate of potash in connection with formaldehyde. This was all right until the increase in price, due to the war, made the use of it prohibitive. Next came the formaldehyde candles, but they are now, also, too expensive.

I knew the use of cyanide of potassium and sulphuric acid, but as one whiff of the fumes of this combination would be instant death to man or beast, it is not available. If a drop of the strong prussic acid were put on a man's tongue he would be dead before he struck the ground. I have exposed combs to the moths, then sprayed the combs with gasoline. This is effective, but laborious, while dipping the combs costs far too much, so much of the fluid is lost by evaporation and what is held on the combs. Also, there is danger of explosion, if the fumes reach an open flame.

Burning powdered sulphur or the lump brimstone is by far the quickest, safest and, next to the sulphur dioxide made with sodium bisulphide, is, in my experience, decidedly more efficacious, owing I think, to the large amount of moisture thrown off; but the bisulphide costs a matter of 25 cents a pound, wholesale, and sulphuric acid is, just now, expensive, while sulphur and brimstone cost but about 6 cents.

To gain as much moisture as possible in burning brimstone, or sulphur, for they are both the same, chemically, I improvised as follows: Take a big dish pan, set it on three bricks, and into it put some water. Into this set a much smaller dish, metal, of course, and no soldered seams. Fill this inner dish nearly full of sulphur and set fire to it. This for a large room, while for a barrel a much smaller outfit will do. This method makes the use of burning sulphur safe, and we get the moisture from the water surrounding the inner dish, which is heated by the burning of the sulphur.

There is no use trying to fumigate a lot of hives open only at the tops of the piles, so hives which are to be idle in warm weather are arranged as follows. Lay down a small piece of half-inch board, and set a hive on it with the board under one end of the hive. Continue piling hives with pieces of board under opposite ends, and when you have finished, your pile will be level on top and there will be free circulation of the deadly gas to every part of the hives in the pile.

Several piles of hives in a tight room can in this way be all fumigated at once. It is a good, efficacious method, and cheap, for a couple of pounds of sulphur is sufficient to saturate a room 10x20x10 feet in size with sulphur dioxide. The fumiga-

tion may be begun at night, and by morning it will be finished.

The Francis letter follows:

"Turning to the chemical question which you have raised, allow me to say that I can thoroughly understand that everybody is looking for some kind of an insecticide which will clean out moths and eggs in combs. If I knew of something which would be "fool proof," non-poisonous and would always be sure to get every single egg, I would certainly give my brother beekeepers the advantage.

I am convinced that there "ain't no such thing"—but some things are very much better than others.

Sulphur dioxide is probably about as nearly effective in destroying both worms and eggs as anything that could be used, but it is just a question as to how the beekeeper can use it to proper advantage and use enough of it.

When ordinary brimstone or sulphur is burned in a barrel or some other tight receptacle and the open hive is set over it, you will do a fairly effective job in destroying the eggs or insects, provided you get enough sulphur and, most important of all, provided there is an opening or a hole that allows the sulphur fumes to reach the egg fully. If the egg happens to be sealed up behind a wall of wax or propolis, nothing of this kind will prove effective, for the simple reason that it cannot reach the egg.

Aside from producing sulphur dioxide by the above method of burning sulphur or brimstone, there is a second or chemical method as follows:

Procure a small quantity of sodium bisulphite from some dealer in chemical supplies and also some ordinary commercial sulphuric acid. Place a handful of bisulphite in an earthenware bowl, put it in the bottom of a box or barrel, add enough water to about half cover the crystals, and then pour on sulphuric acid. A chemical reaction takes place which sets sulphurous acid free in the form of a vapor or gas. One could arrange a tight box of this kind with an opening at the top that a hive would just set over after the bottom is removed; or, on the other hand, one

could put a couple of ounces of sodium bisulphite crystals in an ordinary saucer, and a tablespoonful of water, slip it through the opening in the front of the hive just as it stands with the bottom-board on, and then pour in about two ounces of commercial sulphuric acid. The saucer containing the ingredients could then be pushed well under the frames and a tight board could be placed over the opening to prevent the gas from escaping.

As you undoubtedly know by experience, gasoline is absolutely deadly to any insect or insect egg, provided only that it can be brought in contact with the egg. Gasoline fumes will not kill the eggs.

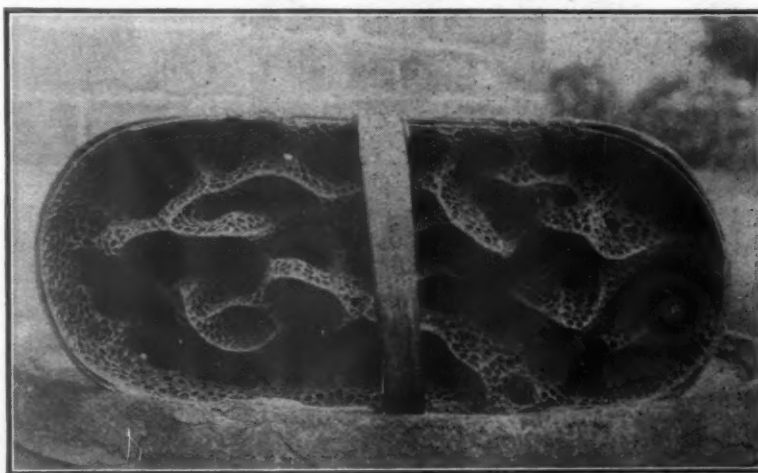
Another method would be to take the bee hives as they ordinarily stand, tightly seal, remove the strip so as to expose the full length opening in front of the hive, slip a saucer under it and in this put a couple of ounces of potassium cyanide. This is a deadly poison and it must be handled with care in the matter of getting any to the mouth. Allow the edge of the saucer to project slightly from the mouth of the hive and quickly pour in a mixture of about two ounces equal parts of water and sulphuric acid. The acid sets free from the potassium cyanide the deadly gas ordinarily known as hydrocyanic acid. The opening in the hive must be quickly stopped up.

As you know, hydrocyanic acid gas is used in enormous quantities to destroy weevils in mills and elevators. The gas quickly gets into all the cracks and does a clean job of it. I cannot speak authoritatively as to how effective it may be in destroying all the eggs." J. M. FRANCIS.

WIRING COMBS

By Frank M. Gift

The foundation in my frames does not "sag." My method is to nail a large number of frames in advance and hang them up to season, shrink and dry for at least 5 or 6 weeks; then I wire them, 4 horizontal and 2 cross wires, using the top and bottom holes for the latter. To even the



Basket of combs presented to the Ontario beekeeping department by J. L. Byer. A basket of cappings was placed in a super to be cleaned by the bees, with the above result.

tension of all wires, I "cant" them over between the holes on ends of frames, holding the wire in place with a No. 2½ tack. I do not hesitate to proclaim being the owner and producer of as perfect combs, Jumbo, standard and extracting sizes, as bees can make, and I am only a back lotter at that. I even use 2 horizontal wires in the small super frames, as I have the time, the money and the disposition to have everything just right. But the old "bee man" told me "It won't work; it won't work." His father "kept" bees, and likewise his grandfather—gums, boxes and kegs were the habitations for the bees—"it won't work—won't work, these new-fangled traps." I said to the old "bee man:" "it was not so much the house as who lives in the house," would apply to man, but not to bees. The old "bee man" laughed at my veil and gloves; he never used them, his father didn't, either; they could gather the bees up by the handful (of course they got stung a little, he said), and now this old "bee man" hobbles about with a cane, muscles contracted and joints stiff. (His father got that way, too, he said) poisoned to the core by bee stings. No one is a coward and a fool to use a veil and gloves, rather will he be wise in the end. This old "bee man" came up to see my nuclei yard, and I gave him a chair beside the observation hive and told him that the bees therein were started with a 3-frame nucleus about 30 days ago. I showed him how they had packed the chamber with brood and honey from glass to glass, with the "won't work" system. "Yes," said he, "I have taken a lot of that kind of honey from the gums when a boy." Then the old "bee man" looked out of the window and saw a bunch of young bees that had come out of the hive to frolic and get the "bee line" and he said they were working fine.

FINDING QUEENS

To find queens I would suggest that the beginner have two pieces of

gunny sack a little longer than the hive and wide enough to cover the hive and bag down two or three inches on each side. Nail a strip of wood on each side of the sack to keep it in place. Have an empty hive convenient, place the combs in empty as taken from the hive, and keep covered with one of the sacks to keep away robbers and to keep the bees from flying too much. Keep the other sack over the hive, rolling back as frames are removed. In this way far less smoke is required, hence bees are quieter and the queen easier to find.

J. M. CUTTS,

Montgomery, Ala.

ANOTHER NEW EXTRACTOR

There has been much interest manifested in the extractor described in the December issue of this journal, last year. Another machine which reverses in similar manner, but which is controlled from the bottom instead of from the top, has been built by G. W. Markle, of Brantford, Ontario. The Markle machine has been in use in Canada for two seasons, and one of the most extensive producers of that region is very enthusiastic about it, after extracting something like 50 tons of honey.

Our first illustration shows the extractor with a portion of the can cut away to show the inside mechanism. It will be seen that the entire top of the machine is clear and that all machinery is under the bottom of the can. The baskets are reversed automatically by simply pressing the foot lever. When they have turned half way round, thus exposing the opposite side of the comb, they stop without attention on the part of the operator. The second illustration shows the construction of the reversing mechanism, and also the support of the baskets. The baskets reversing on their centers, turn so smoothly and quietly that one would hardly notice the movement, and there is much less breakage of combs than is the

case with extractors in common use. There is a great saving of time since it is not necessary to stop the machine to reverse the baskets, and they can be reversed as often as desired without inconvenience.

The honey when thrown from the combs falls at once into the channel, which can be seen surrounding the machine, and does not come into contact with the operating mechanism. The whole is easily cleaned, since the baskets can be lifted off their supports and the can removed to be washed. Side braces support the baskets, one fastened to each top corner and extending down to opposite corner, as clearly shown in picture.

The principal objection to the machine that is so far apparent is the amount of machinery necessary, which makes its cost rather high.

We believe the planetary system of reversing is the correct principle, and that in time it will entirely replace the old style extractors now in use. Several different inventors are at work along similar lines, and sooner or later the ideal will be reached. Mr. Markle is apparently well toward the head of the procession at present.

AN OLD LETTER ABOUT BEES

Editor American Bee Journal:

The enclosed letter is from White's "Natural History of Selbourne," a book well known, no doubt, to a good many of your readers, but perhaps not to all. For the benefit of these latter I have taken the trouble to have the letter transcribed, believing you would think it sufficiently interesting to give it space in the Journal.

Very truly yours,

F. X. TIDDY,

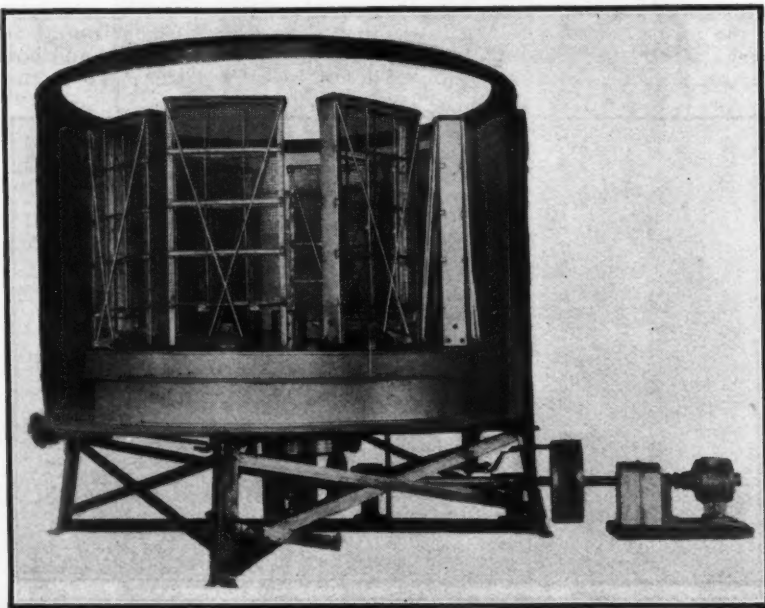
Brooklyn, Md.

Letter XXVII

Selborne, December 12, 1775.

To the Honorable Daines Barrington:

Dear Sir: We had in this village more than twenty years ago an idiot boy, whom I well remember, who, from a child, showed a strong propensity to bees; they were his food, his amusement, his sole object. And as people of this cast have seldom more than one point of view, so this lad exerted all his few faculties on this one pursuit. In the winter he dozed away his time, within his father's house, by the fireside, in a kind of torpid state, seldom departing from the chimney-corner; but in the summer he was all alert, and in quest of his game in the fields, and on sunny banks. Honeybees, bumblebees and wasps were his prey wherever he found them. He had no apprehensions from their stings, but would seize them *nudis manibus*, and at once disarm them of their weapons and suck their bodies for the sake of their honey-bags. Sometimes he would fill his bosom between his shirt and his skin with a number of these captives; and sometimes would confine them in bottles. He was a very *merops apiaster*, or bee-bird; and very injurious to men that kept



Markle's new extractor, with side of can removed to show construction.

bees, for he would slide into their bee-gardens and, sitting down before the stools, would rap with his finger on the hives, and so take the bees as they came out. He has been known to overturn hives for the sake of honey, of which he was passionately fond. Where metheglin was making he would linger round the tubs and vessels, begging a draught of what he called bee-wine. As he ran about he used to make a humming noise with his lips, resembling the buzzing of bees. This lad was lean and sal-low, and of a cadaverous complexion, and, except in his favorite pursuit, in which he was wonderfully adroit, discovered no manner of understanding. Had his capacity been better, and directed to the same object, he had perhaps abated much of our wonder at the feats of a more modern exhibitor of bees; and we may justly say of him now—

"Thou,
Had thy presiding star propitious
shone,
Should'st Wildman be."

When a tall youth he was removed from hence to a distant village, where he died, I understand, before he arrived at manhood.

THE BEES AGAIN

By Rev. A. A. Evans

I heard a man complain in lamentable voice of the cruel behaviour of his bees towards him. "You can look at the beasts but they go for you. My wife goes on about it, 'I wonder you keep such a strain,' says she; 'they ain't fit to be near Christian people.' Maybe I don't smell right for them. They say there are some folks they can't abide; something in the smell which angers them." I did not smell the speaker, but when an opportunity came, I watched how he went about the job. He took the hive cover off and proceeded to take off the inner boards; but no, he did not take them off; he wrenched them apart; he committed an unpardonable sin, he set the whole hive ajar, and at once I heard the hiss and rumble which presages an army on the wing, and I beat a hasty retreat. But the manipulator had no ears to hear. "There, didn't I tell you so? Aren't they furies?" So they were, and such a handling, frequently repeated, would transform the most amiable of bees into violent viragoes and a common danger. I found that in painting the hives, the parts overlapping, which should be removed without friction, were sticky and glutinous. A little emery paper put this right, but it would take months to restore those bees to a decent temper and a becoming citizenship.

DO THINGS RIGHT

By A. F. Mead

That article in the July Journal about "Beginning With Bees," has more real meat in it than some whole books. Any beginner, and almost any experienced beekeeper, who will read the article carefully will find it of more value to them than the cost of a year's subscription to the

Journal, and I want to emphasize what he says about thoroughness. **Do things right.**

We do not always know what course to take, but if we go ahead and do what we think should be done and be thorough about it, we will not often go wrong. Such a beekeeper will keep things neat around his apiary and will not be obliged to make excuses when visitors or the inspector call. In my work I visited one man with 34 hives, every one set flat on the ground, no attempt made to clean up weeds and grass, and in a number of cases I was obliged to clear away the growth before I could find on which end of the hive was the entrance. Another, with 19 colonies, which had swarmed until he had used up all his empty hives and did not know what to do next, had supers on less than half the colonies where they were needed, giving as the reason for his neglect that he "hadn't got around to it."

I believe one important part of the work of the inspector is to punch up the neglectful ones who will not read and show them something of what can be accomplished if they will do things right and on time. Many of them will be helped by a little good advice, and perhaps assistance, while with others it is plainly evident that the only thing to tell them is to straighten up their cross-combs and box hives and clean up or go out of the business.

Battle Creek, Mich.

A MATING QUEEN

Yesterday I witnessed an incident, the first of its kind in my more than 20 years at it. As I was looking for a virgin queen, she returned from her mating flight with the male parts attached. Immediately the bees commenced to tug at her, and finally one took good hold and pulled the parts from her. I secured them, laid them on a piece of paper and today they are hard as glass. The queen flew di-

rectly on the combs in the mating box as I was looking for her.

C. F. HOSER,

Norristown, Pa.

NEW BULLETINS

We have received two new bulletins from the Ontario Department of Agriculture. Both are by Prof. F. Eric Millen, the Provincial Apiarist. The first, "Transferring of Bees," contains 12 pages, and goes into detail of all well-known practical methods of transferring. The second, entitled "Bee Diseases in Ontario," contains 24 pages, and is a good resume of present-day information relating to bee diseases.

Those interested can probably secure copies by addressing Prof. F. Eric Millen, Provincial Apiarist, Guelph, Ontario, Canada.

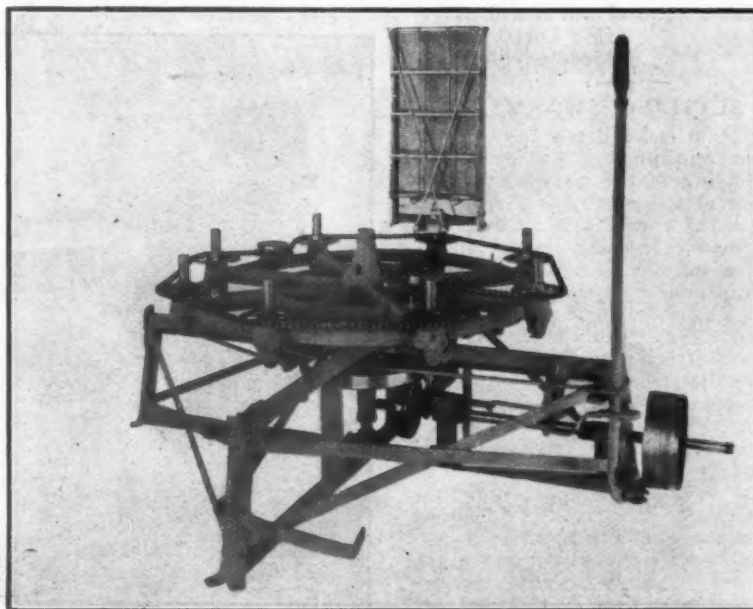
HAS THIS OBSERVATION VALUE?

By Arthur C. Miller

When examining some cells in nursery cages, from which queens had emerged, large quantities of semi-transparent jelly were observed. The cells (on wooden bases) were replaced and later, when the queens were put into nuclei, all the jelly was found to have been consumed. The cages had an ample supply of honey and sugar candy. Now, why did the young queens eat the jelly? What did they miss in the candy food?

Later, tests were made by putting in fresh cells from which larva had been removed, and the queens consumed that jelly. So, it seemed as if they craved something which candy did not supply. If that was true, how about the health of young queens who had only a very small residue of jelly left in the cells from which they emerged?

As it was not always possible or convenient to supply cells of fresh jelly for the young queens, the matter was ignored for a time, until one day several nice young queens caged



Details of reversing mechanism of Markle extractor.

in a strong stock for longer than usual, were noticed to be feeble or dead.

Then the experiment was tried of mixing the food for the cages with pollen, fresh honey and powdered sugar, making the food moister than usual. Queens on such food did nicely, even though long confined.

Will some queen breeders please observe and report facts as they find them, and perhaps some of our experiment stations can make special studies of the subject.

Bear in mind the foregoing refers to food in nursery cages, **not** to mailing cages.

QUEEN CAUGHT LAYING IN QUEEN CELL

All during early summer I made increase. I took three frames of emerging brood and one of honey and placed all with adhering bees with about two pounds of bees additional on a new stand, giving a ripe queen cell. A few days later I tallied for the hatched virgin, and in another couple of days for the laying queen.

Weather conditions were good and a heavy flow on, and my operations were a great success. I made over 100 of these new colonies.

One day recently, in looking for a laying queen, I found a queen cell instead, with an egg in it. I was puzzled. The queen was there and seemed to be laying satisfactorily. The cell I destroyed.

When I looked two days later the bees had rebuilt it, and while I held the comb the queen arrived at the cell, poked her abdomen into it several times, with her hind legs outside the cell. Each time she would turn around and look down into the cell, and once she dropped three eggs on the outside of the cell. I replaced the comb and shall observe closely what comes of it.

Evidently the bees were superseding the young queen. It seemed a little unusual to me to have a young queen laying in a queen cell to rear a queen to supersede her. Something I had never read of nor heard of.

JESS DALTON,
Bordelonville, La.

SETTLING SWARMS

I notice in Dr. Miller's answers the question and answer on settling a swarm flying in the air. I have settled several stray swarms flying over by following them to a plowed field and throwing dirt into them.

This season one of my own swarms pulled out and left before I could finish the job. I followed them a short distance to a freshly plowed corn field and settled them in short order with the dirt treatment.

The queen in the above swarm was a virgin trying to make away with a first swarm, and these same bees swarmed twice, in 30 minutes or less, about a week before, each time returning to the hive, as the old queen would not accompany them.

I would advise the wearing of a bee veil, if one is handy, to any one trying to stop a swarm by this method, as I have never failed to get stung

without one. I am a farmer and have been keeping bees for the last five years. My limit is 20 colonies, for I find that a few taken good care of pay well, and that is about all I have time to care for properly.

JACKSON DAVIS,
Kentucky.

DEATH FROM STING

There was a sad accident here about 10 days ago. A neighbor's little girl, at play, being barefooted, stepped on a bee, or was stung on the sole of her foot (by a honeybee or a hornet, hard to tell). She was taken with spasms. The doctor was called. He could do nothing. The girl died within an hour. The doctor said he never heard of such a case before. I am in my 87th year, writing without glasses.

M. S. SNOW, Puyallup, Wash.

HONEY ADVERTISING

By H. W. Hailey

The truth of the statement, "There is no royal road to success," has never been questioned, yet D. M. Story, who lives in the fertile Fountain Valley of El Paso County, Colorado, has found that a simple sign on his house by the side of the road has given him a good start on that royal pathway.

This sign, "Eat Honey and Keep Well," was the medium of advertising which sold for this beekeeper 25,000 pounds of honey last year and developed for him a mail order business that takes his honey to a score or more Eastern States. Mr. Story lives on the Colorado North and South Highway between Pueblo and Colorado Springs, a road that is traveled each year by thousands of auto tourists from many States, as well as hundreds of Coloradans. Some of these people took their honey with them, while others left mail orders for late fall and winter shipments.

Daniel M. Story was born on a farm near Marion, Mich, thirty odd years ago, and it was there, as a boy on his father's farm that he learned to care

for bees. There were several hives out in the old orchard, and the robbing of these each fall was to Daniel little short of a miracle. He loved to watch the bees work, and embraced every opportunity to learn something of their life and habits. As he grew to young manhood he continued to study bees, partly because he liked honey and partly because there was a good market for its sale in Detroit and other nearby cities. Then came a siege with pneumonia and lung trouble, and the doctor advised his removal to Colorado, and here begins the story of his success as a honey producer and salesman.

It was seven years ago that he came to Colorado, bringing with him several colonies of bees. A homestead claim was staked in the mountain foothills, but he soon saw that if his bees were to produce honey in paying quantities they must be closer to the large fields of blossoms, for the flowers around his sand hills home were few and far between. A small place in the Fountain Valley, a section where there are hundreds of acres of alfalfa under irrigation, was rented. His colonies prospered and increased until today he has 180 of them located at three different points five miles apart, and from these points they cover the valley for a distance of twenty miles.

The homestead was proved up, the rented place purchased, a good house built, but most important of all his health was fully restored. "How did I get the idea of putting out the sign? Well, it was this way," said Mr. Story. "You see the flowers have to have their pollen carried from one bloom to another in order to fertilize their seed, so they advertise to the bees that they have honey to give away in return for this service of scattering the pollen. Their fragrance is the advertising medium and the honey is the commodity with which they pay for the service. For many years all my honey was sold to the wholesalers, but I found that the margin of profit over the cost of production was not so large as it should be, so I began to think. If the flowers had so successfully found a way to dispose of their pollen, there must be some way in which I could attract buyers, and that sign on the front of my house is the result. You can judge the success of it for yourself, for I sold last year the 11,000 pounds of honey that my bees produced, and purchased 14,000 pounds from other beekeepers in order to supply the demands of my customers, in all more than twice as much honey as I ever sold in one year before."

Mr. Story finds the production and sale of honey not only a lucrative, but an intensely interesting, occupation. "I thought I knew a lot about bees when I came here, but I found that I still have much to learn. Keeping bees here is much different than in the Eastern States. Here we have a very short season of real honey making. The few fruit trees that blossom in May and June give the bees their first activity of the season, but we do not take honey



D. M. Story, successful Colorado beekeeper.

from the hives until about July 20. Then again in August, and sometimes in September, we get another lift. The honey that I take is all from alfalfa and sweet clover. The sweet clover could not be grown here successfully until my bees came, because it would not fertilize, and the fields had to be reseeded each year. So you see the bees not only work for me, but they work for all the farmers in the valley, too."

As there are about forty to sixty thousand bees in a colony, Mr. Story is the proprietor of about 9,000,000 stings, yet seldom gets one himself. "It's very simple," he says, "because bees are naturally friendly and tend strictly to their own business. It is only when they have been disturbed that they get reckless with their stings. I handle them very gently and on most occasions do not find it necessary to use smoke. My experience with them has taught me that they are a good deal like human beings, for they are most tractable when they are well fed."

We have all gazed with amazement on the "Bee Wizard" in the side-show at the county fair; watched him put them in his mouth; let them swarm and hang from his chin like a 2-foot beard; and do other wonderful stunts with them, all of which is very simple if you know how. The secret of it, says Mr. Story, is that the bees are full of honey, too full in fact to double up and sting, and also lacking in the inclination, because they are overfed and lazy.

All men can't be beekeepers, of course, but the man who finds his health impaired and is forced to seek light work, might take a new lease on life and find pleasure and profit in bee culture and the sale of its marketable product — honey. Having taken their cue from Mr. Story, it is reported that the National Beekeepers' Association, of which he is a member, will adopt for its slogan, "Eat Honey and Keep Well."

Colorado.

WHY APIARY RECORDS?

By Arthur C. Miller

Why keep apiary records? Well, why? What do they tell? Of what use or value are they? Do they lessen labor, facilitate work or reduce cost of operation? And if they do one or all of these things will not the time and labor of making and consulting them more than offset the gain?

I have seen and used many sorts and kinds of record systems and I believe I have a fair idea of their virtues and vices, and when properly kept I am sure their virtues more than offset their vices. Before starting records one must have a clear idea as to what it is desirable to record. If one is searching for breeding stock one sort of information is wanted, if one is playing with all sorts of manipulation another sort of facts must be kept track of, while the busy commercial honey producer needs something entirely different. Let us consider the last and most important case.

Such a man wants to cut corners, save time, lessen labor and his records should be brief, easily read and show at a glance what colonies need to be looked at, when and what for. He does not want to needlessly open a single colony, and when he opens one he wants to know just what to look for. Further, if he must send a helper, he wants to be able to tell him exactly which colonies to attend to, and what is needed.

The first necessity is some method of designating the colonies, and a numerical system suggests itself, so numbers are put on the hives, the hives get moved and interchanged and the number system becomes a confusing jumble. To avoid it, numbering the stands is substituted and that trouble is over. If a colony or a part of one is moved, it is only necessary to indicate it on the record, and no confusion can occur.

The busy man needs to know but few facts, and the better beekeeper he is the fewer items he has to set down. But he wants his records to show two things distinctly, namely, what has been done and what is to be done. On his first inspection in the spring he wants to know the fall condition of each colony. With this information before him a very casual glance into the hives will tell him all he needs to know. If the record shows that a particular colony had abundant food, a young queen and a goodly population, a brief glance into the hive or a glance at one or two combs will tell whether all is well or otherwise. He knows that colony should be strong and booming, and he knows that all he must look for is stores to be sure that breeding has not depleted them too far. In the case of a colony which had a full larder and a young queen, but possibly a little short of bees, or too many old bees, he looks to see if the population has kept up and increased. If it has not, he follows his custom under such conditions. If a colony otherwise normal was a little short of stores in the fall he goes to it prepared to give food in some form. If a colony had an old queen he knows why it has not kept up or increased

and he knows what to do. His records show which colonies went into winter quarters small; but with a young queen and plenty of food, and he can instantly put his hand on the one he wants to combine the poor one with, if that is his practice.

The ideal colony first referred to needs little time to inspect or record. He notes that on his next trip that colony will need one or more supers, as his custom or location demands. So we see that a useful record must show conditions as they were, as the colony is one factor, queen age or strain is another, brood condition another, food another and storage room present or needed is another.

All of these things and many more are often set down in long hand in a blank book, and it makes a prideful thing to the keeper, but to the rushed man and to those unfortunates who have to have special glasses for reading, such records are far from a pleasure. Then the abbreviations used are frequently ambiguous and confusing and we often find a lot of non-essential facts which only add to the labor of using the records.

Records kept on or in the hives have their value, but it is limited, and they are too easily moved, misplaced or lost. A book of some sort, loose-leaf or otherwise, seems preferable. I have used for years a loose-leaf book with a special ruling and a simple system of signs and abbreviations. It may not be perfect, probably is not, but it has worked satisfactorily. The principle, however, I think worth passing along for others to try, and they can modify it to suit their fancy or needs.

Each vertical column represents days, while each horizontal space is the record of the colony whose number is on that line. Dates are put at tops of columns only as work is done. Records appearing in the next and undated column are of things to be done. A glance down the undated column shows at a glance just which colonies are to be looked at, and just for what.

The vertical and horizontal rules cut the page into squares, each of which is for one day's record of one



D. M. Story's honey house. The sign sold 25,000 pounds of honey.

colony. These squares are cut into four lesser squares by other lines and each lesser square is devoted to certain things about the colony so that a notation in that square pertains always to one thing.

The signs and abbreviations used have been developed through experience, and the signs are those intelligible to everyone. Arithmetical signs are very convenient. Plus (+) means add; minus (-) means take away; divide (÷) means literally divide. The interrogation mark (?) means investigate the conditions of the part designated by the square in which it is placed. The arrow head (→) signifies "to" or "from;" if a number is put at the point of the arrow it means that something has been moved to that number; if the number is at the opening of the arrow head it means the thing "came from" that number. A slanting line (\) cancels a record. A circle (O) means the stand is vacant. A check mark (✓) means all is correct in the department where it is placed. If it is in the center of the four squares it means that everything pertaining to that colony is as it should be. The question mark in the same place means investigate everything about that colony.

Abbreviation of words confused for a time until certain ones were dropped entirely and others substituted. The following have been found satisfactory: "dq" means dequeen, "re" means requeen, "and" means superseded, "sdg" means superseding, "cl" means cell, "v" means virgin, "lg" means laying, "msg" means missing, "swm" means swarm or "swd" means swarmed.

An "x" placed in the crop square means an extracting super, while a "c" in the same place means a comb honey super. A capital "E" on the line between the brood square and the crop square means an escape-board there, while a zigzag line in the same place means a queen excluder. This zigzag line and the

arrow head are the only two signs that are not at a glance intelligible to anyone. Whether a sign means a thing has been done or is to be done depends on where it is, whether in a dated or an undated column. In the case of a swarm it is a little different, because the colony on a new stand may be a swarm or a colony on an old one may have cast a swarm.

There is another factor of great importance, and it calls for the personal element, i. e., your estimate of colony size. Personally, I keep in mind four sizes of colonies, "1" is the best it can be for the time of year, "2" is the next best. Number "1," at the approach of the surplus flow, would be ready for comb-honey supers, while a "2" would only do for extracted honey. A "3" would be big enough to do something on a later flow, or might pay for a little re-enforcing from a weak colony. An "N" stands for a nucleus.

If a colony is not looked at no record is made and the previous record stands. If running out apiaries, or if the apiary is some distance from the shop or store room, a glance down the first undated column will tell just what must be taken to the yard, and extra trips and lost time will be avoided.

At first the record book sometimes gets left at home, but after one or two such experiences it becomes as much one's companion as the vehicle which carries him back and forth. My own loose leaf records are kept in wooden covers, painted a bright red, so they never blow around or get out of sight.

ALAMEDA COUNTY MEET

The Alameda County Beekeepers' Association was formed in April, 1919, C. W. Hartman and Ralph B. Calkins being the principal organizers, and since that time has held monthly meetings at the Hotel Oakland, one of the most popular hotels about San Francisco Bay. Although no previous report of the meetings of the as-

sociation has been made, there is no question but that we have one of the best attended and enthusiastic associations, composed principally of "Backyard Beekeepers," in the country. At present writing we have 103 enrolled members and send notices of meetings to more than 200 beekeepers, most of whom are located in Alameda County.

The accompanying picture is of a group in attendance at a field meet at the residence of the President of the Association, Mr. C. W. Hartman, receiving practical instruction in the hiving of a swarm which was accommodating enough to come out during the course of the meet. This field day was the final activity of a convention recently held by the association in co-operation with the University of California, covering afternoons and evenings of three days, and intended principally for beginners. Competent speakers handled subjects of general interest and very good results were obtained, the most important of which being a considerably increased appropriation to the department devoted to beekeeping in the University. Mr. Willis Lynch, President of the State Exchange, being in attendance at the convention, took the opportunity of approaching Dean Thomas Forsythe Hunt in regard to enlarging the scope of the department, and due largely to the enthusiasm in evidence at the meetings, the Dean, we are glad to say, has granted the increase. We believe that if other associations were to co-operate more closely with the State Universities it would be productive of similar results.

The last monthly meeting was held on June 4, Rev. George W. Phillips, nationally, or we might say internationally, known as the sometime manager of the A. I. Root Company's apiaries, being the principal speaker. Dr. Phillips is a magnetic and exceptionally interesting lecturer, and the announcement of a talk by him is always a drawing card.

Much interest was manifested in the story of another member of how he made an extractor out of an old barrel and the gearing of a chainless bicycle.

NEW ORGANIZATION

At a meeting of the beekeepers of Lucas County, Ohio, at Toledo, on August 4, the following officers were elected for the ensuing year:

President—Dr. Geo. H. Jones;
Vice President—Albert W. Just.
Treasurer—Charles Milroy.
Secretary—R. C. Marsh.

This is a new organization, there having been no previous organization for this county. A great deal of interest was manifested and a rapid growth is predicted for the industry in this section.

For further information address R. C. Marsh, Secretary, R. F. D. No. 4, Toledo, Ohio.

NEBRASKA BEEKEEPERS TO MEET

A meeting of the Nebraska Honey Producers' Association is to be held at the State Fair on Thursday morn-



Taking down a swarm at the Alameda County, California, beekeepers' field meeting.

ing at 10 o'clock in connection with the honey exhibit. This meeting is for the purpose of formulating plans for securing a new bee inspection law and a state apiarist.

O. E. TIMM, Secretary.

British Columbia Beekeepers

The Beekeepers Association of British Columbia will hold a convention of beekeepers at the Vancouver Exhibition, Wednesday, September 15, at 2:30 p. m. The evening session will be of a social nature, with short addresses on beekeeping topics. Visiting beekeepers from Washington and other States will be heartily welcomed, and are requested to make themselves known to the President, Williams Hugh, Box 20 Cloverdale, B. C.

A FEW SMILES

By J. F. Diemer

Some people get very much excited when a bee comes near them. A college student who knew more about books than he did about bees, went with me to an outyard expecting to help extract honey. We loaded up with 60-pound cans and 10-pound pails. On arrival at the bee-yard we found the air full of bees working on white clover. I noticed he seemed a little nervous, so I put a good bee veil over his head, telling him that he was perfectly safe. He loaded up with 10-pound pails and started to the honey house. About 10 feet away two tired bees lit on the veil in front of his face; then something happened. Those pails went in all the different directions you could think of, and with his hands he tore my new veil off of his face and made a run that would have made a foot-racer look slow. When I finally got him back to the honey house and got him tamed down a little he did quite well; but he wouldn't go out of the door.

Mr. So and So, here in Clay County, had 40 box hives. They sat close together, and every bee in them was pure German stock. There was about 15 cents' worth of grass growing in between the hives, and he had a blind horse; he thought to save the grass so he could get some revenue from his bees. So he turned the blind horse in among those hot-footed Germans, and the horse, not knowing much about bees, turned the nearest one over. And the bees, not knowing much about horses, and not knowing, or realizing, what the horse was in there for, flew out and gave that horse some pointers on bee-ology; but he didn't seem to become attached to the bees as the bees did to him; and as he was headed to the southwest, he went in that direction. Before he got out of the city limits of that bee-town he knocked over seven more. Mr. So and So said he had a hot time. I should say he did.

While working in an outyard, a stranger passing by, seeing me use the smoker occasionally, wanted to know what that stuff was I was pouring on them.

A first-class box-hive man came

into a bee-yard where I was helping to take off some supers, for Mr. Batton, in north Missouri, last fall. He thought he knew all about bees, and could tell some great things he had done in hiving swarms, etc. He wanted to help. I was willing. So I gave him a job putting a super on a pro-German colony, the only one in the yard. He got the cover off, and those half-breeds got busy with their formic acid squirt guns, and you ought to have seen that expert box-hive man go towards home.

I hired a big 6-footer to help extract honey. I told him about some others that had let the honey run over on the floor. He said that I needn't be afraid of him wasting the honey, as he had some sense, he had. In about half an hour the pail was running over. I said, "Sam, the honey is running over." He grabbed up the pail and left the faucet open.

THE HONEYBEE IN NORTHERN VERMONT

By Mrs. Helen Mathie

Bees are not kept in large quantities in the section in which I live. In my home town there are as many as twenty small home apiaries. In some adjoining towns there are none to be found, while others have a few. From five to forty swarms is about the size, the larger number not being numerous. If there is any bee disease in any of these small bee-yards it has never come to my notice. There have been years when the bees nearly all died, but it was due to conditions, and not to any disease of an epidemic nature, as new bees were put into the old hives and thrived there.

The common brown bee is the rule, or these bees Italianized. There are much fewer full Italians. They are considerably given to swarming, some colonies casting three swarms. Such colonies, of course, do not give their owner anything but bees. When prevented from swarming, they store a

good amount of honey. Last season a colony, too weak to swarm, put up 100 pounds of surplus, while others that came out in spring strong and vigorous did not put up a pound of surplus.

The owners of bees in this section are all men with other chief interests that claim the most of their time and attention, therefore they either do not know how to work their bees for supplies, or knowing, do not deem it worth while to spare the time from other work. The average farmer has too many irons in the fire to learn the bee business with any degree of thoroughness.

The chief honey plants are the clovers, the low white in the pastures and the alsike and red in the fields, and goldenrod. Buckwheat is not raised extensively, although most of the farmers having bees raise a small plot. Now and then one sees a small colony of bees in a village, but for the most part they are found on the general farms.

Most of the bees are wintered in the house cellar. Occasionally a man packs them with leaves and winters them out with good success. Wintering in bee-houses does not prove very successful, owing, no doubt, to the great variation in temperature here. One day it may be 40 below zero and within a short time raining. Such sudden changes are not conducive to the health of either bees or people.

The honey of this northern locality has, to me, a much more exquisite flavor than that of warmer sections. The white clover honey, particularly, is very delicately flavored. Perhaps our long, cold winters and cool summers are also in a measure responsible for our freedom from disease.

Section honey sells well. There is practically no extracted honey produced. The consumers here like some comb with their honey, and chunk honey would sell better than extracted. The market is good for all that is produced.

Vermont.

DR. MILLER'S ANSWERS

Questions are answered in order received. As we receive more questions than we can answer in space available, two or three months sometimes elapse before answers appear.

Brood Above Excluder

1. If instead of the Demaree plan I put all the brood and the queen above an excluder, what would happen? Would honey be stored below as well as above? If not, I might arrange an "eke" with excluder zinc on one or more sides at bottom of brood-chamber.

The method is immaterial, but assuming the queen and drones could not leave the hive, what would be the disadvantages? I should be glad if you would tell me exactly what you would expect to find on opening the hive at end of the season?

ENGLAND.

Answer.—1. You may depend upon one thing. The bees aim to put their honey, as much as possible, above the brood. The reason of this is obvious. Bees cluster about their brood whenever the weather is cool, and they do not want their honey between them and the entrance, because it is more exposed to robbers. Starting from this, we can still see

the bees putting the honey below the brood-chamber when they have no other place for it. But as soon as the queen quits or reduces her laying, the honey will be put above her.

2. We have never tried to confine drones within the hive. If they are thus confined, it is quite probable that the bees will worry them to death when the time comes. They would be in the way. The Demaree plan is good to separate the queen from the brood to prevent swarming preparations, but in the way that you propose, we can see no advantage whatever. Confining the queen within the hive with zinc means compelling all the bees that go into her apartment to pass through the queen excluder. You would probably succeed better in having the bees store honey out of the way of the queen, if you kept her in a story below and left

an opening for free ingress and egress above it. If you have many drones and confine them, better have a drone trap and get rid of them when they try to take flight. I would keep close tab on that colony and see that everything went well with it. Any abnormal management needs close attention.

Laying Workers—Foulbrood

1. I have a colony of bees that rather puzzles me. On April 24 there was no brood in the combs. On May 1 there were two frames that had about a hundred eggs and young larvae. They also had a queen-cell. On May 6 the queen-cell had been opened, as if the queen had emerged. But there was no sign of her, and the bees had another cell started and capped over. Now what I would like to know is, what is the reason of this? Are the bees preparing to supersede? That is my guess.

2. In 1917 I bought a queen, and she is about the most prolific queen I have ever seen. In some cells she will lay two eggs. I have her in a standard 10-frame hive and can see no reason for this, unless she is just an exceptionally good queen. She would not do for a breeding queen, as she was not purely mated. Last year my bees had European foulbrood, and in spite of this the colony that was headed by this queen gave 45 pounds surplus and a good swarm. What do you think of that?

ILLINOIS.

Answers.—1. My guess is that your colony has a drone-laying worker, or perhaps several, and no queen. The reason the queen-cell was opened was that it contained only a drone, and it died. The one built later will have the same fate. It may be that they have a queen, but in that case the queen is old and no longer able to lay eggs that are impregnated, therefore you should either give that colony some young brood from another colony or unite it with another. Hunt for that queen, if there is one, and kill her.

2. Your experience with foulbrood shows that beekeepers should not get discouraged when they encounter it. In nearly every case, those who have had to fight foulbrood have proven more successful afterwards than before.

Manufactured Honey

As I am a small beeman and sell most of my honey to my fellow workmen, I bump up against some queer imaginations. One of the men said that three-fourths of all the comb honey on the market was artificially made of paraffin wax and syrup, and none but an expert or chemist could detect it. He offered to bet any amount of money on it, for he claimed he saw it made with his own eyes by a Greenville manufacturing company at Greenville, Texas; also a bee supply manufacturing company. I would like to know if any comb honey can be manufactured.

MISSOURI.

Answer.—Your fellow workman only repeats what he heard said by others. Some 40 years ago, Dr. Wiley, who has been U. S. Chemist, told that story for a hoax, but it was repeated in many papers, and is still believed by thousands of honest people. There is absolutely no truth in the statement, and A. I. Root, of Medina, Ohio, who is worth several hundred thousand dollars, offered \$1,000 for a single comb of manufactured honey. Nobody ever took him up. Your man did not see a manufacturer of comb honey at Greenville, Texas, or anywhere else. He perhaps heard of a comb foundation factory and took that to be a comb honey factory.

There is a very good way in which anyone could tell manufactured combs, if such could exist. As all things made by machinery, they would be all alike, or at least there would be only a few patterns. But if you go to a crate full or a carload of comb honey, you will see that no two are alike, just like the leaves in the woods or the trees of the forest. Anyone who will look at sections full of honey, unless he is decidedly weak in the brain, will readily see that it is impossible to make such a variety of shapes, except in the natural way.

Weak Colonies

I have two colonies of bees that have been packed in chaff all winter. I opened them the other day and found that most of the bees were dead, but each had a queen. There is an abundance of honey in the frames. I found so many dead bees on the bottom that the entrance was stopped. I cleaned it off and opened the runway. I found one late swarm dead that had plenty of honey. I have two other colonies, one with a fair amount of bees and the other an 8-frame hive full of bees. How would be the best way to build up the weak hives? Could I take a frame out of the strong hive and put it in without injuring the strong hive? Or would it be better to buy bees by the pound? How many would I need for the two hives? I am using 10-frame hives with nine frames in them. Is it a good plan?

NEW YORK.

Answer.—The winter has been very hard on bees in your State, and those bees have suffered from long confinement. If each colony has a quart of bees left, it may save it to give it a small comb of brood. Of course it will weaken the healthy colonies, but may pay in the long run, as it will save the queens. If there is less than a quart of bees left in the hive, it would probably be a waste to try to save them. Much depends upon their condition. Of course, buying bees by the pound is a very good way, if you can secure them in time. A pound of bees for each colony would probably be ample, but the more the better.

Shipping Bees—Division, Etc.

1. I am buying a colony of a friend, which will be shipped by express. He tells me that unless they arrive on a warm day they will all die, because when disturbed they fill up with honey, and unless they can make a flight upon their arrival, they will die. Is this so?

2. About June first, or as soon as I can see that there are queen-cells formed, I will divide the colony by taking 3 frames with at least one queen-cell and place in a new hive on the old stand and move the old hive with the queen to a new stand and place a slanting board in front of the entrance, so that they will notice their new location when emerging. Is this proper?

3. I have purchased everything the Cornell University, of Ithaca, N. Y., advises the beginner to have, including five hives with supers for comb honey. If I buy one or two pound packages of bees would it be safe to put them on the full sheets of foundation, or would they break it down?

4. If I buy nuclei or packages I understand the queen is safely introduced by the dealer before shipping to the purchaser. Is this so?

NEW YORK.

Answers.—1. No. If the bees are supplied with enough food, enough ventilation, and are handled carefully enough not to break their combs, they will stand confinement easily a week. They fill themselves with honey when first disturbed, but they finally quiet down, especially if kept in a fairly cool place.

2. Yes, it will do. But you may not find queen-cells with brood in them as early as you expect.

3. The bees of a pound package are not likely to cause the foundation to break down.

4. The queen is usually shipped with her own bees.

Texas Laws—Transferring

1. What are the laws of Texas, in regard to taking bees into the State? Do bees have to have a certificate of inspection?

2. I have some bees I would like to change. They are in movable frame hives, but the frames are getting rotten; combs are most all straight and frames are regular size. They have lots of honey and brood. Could I put a new hive under, with old frames above and new ones below, with an excluder between them?

ILLINOIS.

Answers.—1. A certificate must be secured from the State Entomologist or State Inspector of the State from which the bees are shipped, showing that the bees are healthy. A copy of this must be filed with

the State Entomologist of Texas at least ten days before the bees are shipped. The law is very lengthy and you had best write to the State Entomologist at College Station, Texas, to secure a copy and some information.

2. You can certainly put new hives below with the old ones above. But why use a queen excluder? You certainly want the bees to go into your new hives, and the sooner the queens move out of the old combs the better it will be. After the queen goes into the new combs, you can sort out the old combs and save all that are still good.

Increase—Swarm Control

1. On page 134, "Dr. Miller's Thousand Answers," in recommending the Alexander plan of increase, he advises killing all queen-cells in the second story at the time of placing same on new stand; then to give a cell from another colony. Why is this done?

2. Was the Hand switch lever system of swarm control not a success? I see nothing printed in the bee papers about its being used at present. Please give some reasons for its discontinuance.

KANSAS.

Answers.—1. On the page to which you refer, I think you will find nothing about killing cells in upper story, but that cells are to be killed on the frame with the queen on the lower story. However, as Mr. Alexander advises, later on cells are to be killed in upper story "unless they are of a good strain of bees that you care to breed from," and then you are to give a queen-cell of other choice stock or else give a queen.

2. The system devised by J. E. Hand was enthusiastically advocated by him as a success, but it never came into general use. You want "some reasons for its discontinuance." I don't know just how many reasons you want, but if I were collecting a set of reasons I might begin by asking you why you discontinued it, or why you never adopted it. Like enough you might say only one reason was needed, and that was that you never saw reason enough for using it. Inventions by beekeepers are many, but only now and then does one appear that is considered a success by any but its inventor.

Increase

I am a school boy just starting to learn bee culture. I have one colony of bees. I am pretty likely to be at school when my bees swarm. I would like to divide my colony so as to keep them from swarming while I am at school. If you think the following plan will work, when would you advise me to do it?

Take half of the brood frames, with the adhering bees and put them in a new hive. Fill the empty space in the brood-chamber of both colonies, with frames with full sheets of foundation in them. Put the new colony on the old stand.

ILLINOIS.

Answer.—A good time to operate is when other bees in the neighborhood begin to swarm, perhaps at the beginning of clover bloom. There could hardly be an easier way than the way you outline—simply dividing the colony into two equal parts and letting the queenless part rear its own queen—but it may not work with entire satisfaction. If you put the queen on the old stand there is danger that a swarm will issue with her. Also the young queen reared on the new stand is not likely to be of the best, because all the field bees will go to the old stand, leaving the bees on the new stand too weak and discouraged to rear a good queen. If you put the queen on the new stand there will pretty certainly be one or more swarms from the old stand as soon as the young queens begin to emerge.

You might modify your plan in this way: Take from the old hive and put in a new hive on a new stand two frames of brood with adhering bees and the old queen and shake into this new hive the bees from a third comb, re-

turning the comb of brood to the old hive. The bees in the old hive will be in condition to rear the best kind of queen-cells. About a week or 8 days later let the two hives change places. The old bees from the new stand will go to the old stand, thus weakening the colony so that there will be no swarming allowed, and the colony will be so strengthened that it will do good work at storing.

Finding Queens—Feeding, Etc.

1. How may I find the queen in my hive? I have looked for her many times, but do not find her. I have hybrid bees; am positive I have a queen.

2. Do capped cells ever sink in after being chilled?

3. Where can I get some pamphlets on the different kinds of foulbrood?

4. Would sorghum be all right to feed my bees?

5. How can I make my bees eat sugar syrup? I put it out for them in front of the hive in a saucer with white cloth over it about 2 feet away from the hive. This was about April 13.

6. In your March number, on page 101, there is an advertisement of paint without oil, by A. L. Rice. Would this be all right to paint bee hives?

IOWA.

Answers.—7. If you cannot find a queen by looking over the combs, one after another, shake the bees on a sheet in front of an empty box, just as if you were hiving a swarm. Watch for the queen. If you don't find her, shake them again. You must, of course, smoke them sufficiently before you do that. We never failed to find a queen by this method.

2. Yes, more or less. But they never show holes, as in foulbrood.

3. Bulletin 1084 on American Foulbrood is just out. Bulletin 975 on European Foulbrood may still be had. Both are issued by the Department of Agriculture at Washington. We can recommend nothing better.

4. No; bees will hardly take sorghum, and it is not good for them.

5. Bees will take sugar syrup when there is no honey in the field. But as it has very little odor, they must be attracted to it. Pour a little on a piece of old comb. After they taste it they will come back.

6. We have never tried that paint. It takes a few months' trial to know whether a thing of that kind is going to prove good.

Queenless Colonies—Uniting

I want to know the best way to save a colony of bees where the queen dies early, say the first of March, and the best way to turn them together and what time of the day. I have had some trouble in this line. I have been spraying them with sugar syrup. I had 9 colonies this spring; now just 6, 3 queenless.

ARKANSAS.

Answer.—If the colony is strong in bees and you want to save it, you may be able to get them to raise a queen by giving them a comb of young brood, part of it less than 3 days old, from some other colony. But probably the best way is to unite them with some other colony which has a queen.

It is not a bad plan to sprinkle them with sugar syrup in the evening before uniting them. Then, when night has come, give them a little smoke, take the hive body in which they are and place it right over that of a good colony with queen, with a sheet of paper between the two brood chambers. During the night they will gnaw the paper and unite quietly. If the queenless bees have been fed, they are not likely to be ill-treated by the queenright colony.

A good way, also, is to put a swarm in the queenless hive.

Dysentery

I have two colonies of bees that died of dysentery by eating honey from the brood-combs,

mixed with pollen, during the winter. Would you advise me to disinfect the hives and frames before using them again? Is this disease contagious? I do not believe those bees would have died if I had not allowed them to keep that kind of honey.

IOWA.

Answer.—As far as our experience goes, that disease is not contagious. Expose those combs to dry air for a while if possible, then give them, one at a time, to a strong colony. They will clean them thoroughly. This would not be advisable in bad weather, and you should not do it until the weather is warm.

In long, hard winters, any honey that contains grains of pollen is objectionable. Many people object to sugar syrup, but we are very much of the opinion that sugar syrup is much the best for long confinement.

Nearby Fields Neglected

Last year was a lean one for honey in Hawaii. We got very little. In order to help things out for this season, I had a good-sized alfalfa patch very close to the location and gave explicit instructions that none should be cut until fully in bloom. My object was to provide the bees with a close-at-hand supply of nectar, to insure the making for them and make it possible also for them to find their supply without much of a trip. Not a blessed bee has touched it, as far as I have been able to observe, and I have watched the patch very closely ever since the bloom appeared. Miss Bee appears to circle around, squint one eye at the alfalfa and then hike away to other fields. She appears to prefer the long haul. Why is this? I am perfectly willing and anxious to help out, but my bees scorn my help.

HONOLULU.

Answer.—My guess would be that it is not the "long haul" the bees are seeking, but perhaps the better crop. Are you sure other patches of alfalfa were yielding honey at that time? I would say that they were working on some other blossoms. Try it again some other time.

Moths—Care of Combs

1. Four of my colonies died during the winter, some of the combs of which still contained considerable honey. These hives, with the combs, I stacked up near the bee-yard, leaving only a small entrance at the bottom for the bees to get in and out, so that they would clean them out. My bees are in the country and I can only see them about once a week. In looking over them a few days ago I found that they were doing this, but I also found that the moth worms had made a start in one or two of them. Dr. Miller having stated several times in the Journal that the best way to protect them was to give them in the care of the bees, I have been wondering if, in case I try this, these combs could be left there during the flow. Won't the bees be likely to store in them instead of going up into the supers?

2. Will it matter any whether these hive-bodies with the combs are placed above or below the strong colonies?

3. Not being with the bees every day, I cannot depend on natural swarming for increase, but shake when I find cells well advanced. Would these empty combs be all right to shake on? Some writers advise starters only, but whenever I try this the bees always build too much drone comb.

PENNSYLVANIA.

Answers.—1 and 2. By placing the combs full of honey of these hives under the brood-chamber of strong colonies, they will probably use up the honey in a very short time. It is quite probable, however, that they are already cleaned out. In that case, just treat them with disulphide of carbon, as recommended in our March and May numbers. They will then do to use for swarms. If you were to place them on top of full colonies, and leave them there, the bees would, of course, fill them again, as soon as the crop begins. They would even fill them if they are at the bottom. This must be looked after.

3. Yes, those combs are good to use for hiving swarms or making divisions. But be sure and do away with the drone comb in them. Also be sure, when you have a swarm

on comb already built, not to give them much room without foundation, as they will be more likely to build drone comb if they have worker combs ahead than if they had it all to build. When you cut out drone comb, you should replace it with worker comb, or the bees will very probably rebuild in drone comb.

Size of Hive—Cotton

1. What is the exact size of the standard 10-frame dovetailed beehive, measuring length, width and depth of outside of brood-chamber?

2. I notice in the May number of the American Bee Journal that field cotton is spoken of as a honey plant. Please describe its value.

MISSOURI.

Answers.—1. Size of broodchamber of 10-frame Langstroth hive, outside: Length, 19½ in.; width, 15½ in.; depth, 9½ in.

2. Field cotton is not spoken of in equal praise by every beekeeper in cotton regions. Pellett's "American Honey Plants" devotes 3 pages to it. Some say that bees will not work upon it if they can get anything else. Others speak of most of the honey harvested upon it being extra floral, some also being secured from plant lice. Others still, like J. J. Wilder and Louis Scholl, speak well of it. Location humidity and perhaps other causes affect it. That it yields honey both in the blossom and in extra-floral nectaries is not to be doubted. The opinions as to its quality vary a great deal. So we cannot give a positive and definite opinion of its advantages.

Combs

I had 6 good strong colonies of bees last fall. I wintered them in a small building 8x20, open on the east side. Two colonies were in Woodman protection hives, nothing between the walls. They are in fine shape this spring; no mold in the hives. Four colonies were in Champion double-wall hives, packed with shavings; 2 colonies dead and 2 very weak. Hives were damp and combs moldy. I left about 60 pounds of honey in the hives for the bees to winter on; most of this honey is left. Can I use these combs again, and the honey, or must I destroy them?

OHIO.

Answer.—No; do not destroy those combs, unless there is foulbrood in them. We have never known mold to injure bees after winter, when the weather gets warm and the colonies begin to gain in strength. If you will give those combs to good colonies, one at a time, they will soon cleanse them, and it will be a fine help for your new swarms. The only combs that you should destroy are those that contain disease. If we had the Isle-of-Wight disease in this country, this might be bad advice. But in a practice of 55 years, we have never seen any bad results from such combs as you describe, though they would not do to give to weak colonies.

Your experience with heavily packed colonies is similar to our experience of 35 years ago. Methods to recommend for winter depend much upon the climate of the locality where the apiarist finds himself. So we abstain from giving advice on this subject.

Decoy Hives

1. How is a decoy hive made?

2. How large should it be?

3. Where does it do best, on the ground or in a tree?

4. I have 3 hives of bees and 1 empty one. If I put the empty one near these three would a swarm (from any 3) settle there?

NEBRASKA.

Answers.—1 and 2. Any hive suitable to have a swarm will do for a decoy hive. It should be all ready, with frames and guides of foundation, so that you may not have to disturb the bees when they go into it of their own accord.

3. Most people think it is more likely to be adopted by the bees when it is up from the ground a few feet.

4. You must not expect them to enter it without fail. Decoy hives are only occasionally accepted by the bees, and it probably makes little difference whether yours is near to the other hives or not.

Answers to Questions

1. After I subscribed to the American Bee Journal I sent in some questions to Dr. C. C. Miller, as I did not know he was sick. I have received two copies of the Journal, but they are not in it. Why?

2. I saw at the top of Dr. Miller's Answers to send an envelope stamped and addressed and you would send the copy it is in. Why is this, when a person has already subscribed?

3. Will the bees make straight cells when the foundation is slightly bulging out between the wires?

4. I am going to requeen the first swarm, as the queen is two years old. Should I leave her to lay a few eggs first? If so, how long?

5. How soon will a queen just introduced lay eggs?

6. Will the bees build out on medium brood foundation fast enough for the queen to lay in about 24 hours? (A new swarm). OREGON.

Answers.—1. Answers to questions, whether they come from Dr. Miller or from the editorial room, cannot always be answered the following month. Sometimes we have enough for 2 or more months ahead.

2. You misunderstood the explanation at the head of the Question and Answer Department. Dr. Miller never replies directly to the enquirer. But the editor has undertaken to send a copy of the replies to be published by mail, to the enquirer, if he sends an addressed envelope. This is for the purpose of giving immediate satisfaction to the man who is looking for a reply to his questions at once.

3. If the foundation is bulged, the cells cannot be straight.

4. Yes, it may be best to let her lay eggs for a week or so.

5. The laying of an introduced queen is immediate if she is not fatigued and conditions are good.

6. Yes, usually. But that depends on the strength of the swarm.

When to Sow Buckwheat

Could you advise me when to sow buckwheat for best results, and who makes a specialty of handling the seed? ILLINOIS.

Answer.—The time to sow buckwheat in Illinois and Middle States is from June 1 to August 1. The seed should be secured from seedsmen, unless you can buy it in your vicinity.

Mouldy Foundation

I have about 10 pounds of thin foundation that seems to have quite a bit of mould on it. Can this be used in the hives for honey? Or, if not, what can be done to it so it can be used? NEBRASKA.

Answer.—If the mould on the foundation is similar to mould often enquired into by beekeepers, a few minutes' exposure to the sun will cause it to disappear. If the foundation was kept in a very damp place and there is a growth upon it, there may be a little more trouble. Try the sun exposure, but do not leave it exposed long enough to melt it. Spreading it on a clean table will answer.

Metal Combs—Transferring

1. What do you think about the aluminum honeycomb? Do you think that it is a good thing?

2. Is May too late to sow sweet clover in an old garden? What is the best honey producing, white or sweet clover?

3. When is the best time to transfer a colony of bees that is in an old hive to an up-to-date hive? ILLINOIS.

Answers.—1. Aluminum honey combs have some advantages and some disadvantages. Their success depends principally upon the

climate. Try them on a small scale, say a hive or two.

2. It is never too late to sow sweet clover. But what you will sow after this date will probably not sprout till next spring. Better wait till fall. White clover is better than sweet clover, but you cannot grow both in the same soil. Sow the sweet clover in waste land, and in ditches.

3. Questions on transferring have been answered in May, page 170; in January, February and April. The best time to transfer is during fruit bloom. But you can drive the bees out of a box hive at any time during the honey crop, when the weather is warm enough so the brood will hatch. If you drive out the bees and queen and put them in a new hive, the balance of the brood will hatch in 21 days, provided there are young bees enough left in the box to keep the brood warm. Then you can drive out the balance of them and break up the old combs. The bees may be given to the original swarm or to any weak colony.

State Apiarist—Good Yield

1. Would you please tell who the State Apiarist is for South Dakota? I have a neighbor about half a mile from me who has had bees and has lost them with foulbrood and has left his hives out on the old stand with honey in them. Can he be made to destroy them?

2. Last spring I bought two hives of bees. I got 6 new swarms and 300 pounds of comb honey from all. Is that good enough? SOUTH DAKOTA.

Answers.—1. L. A. Syverud, of Yankton, is bee inspector for eastern South Dakota.

2. 300 pounds of comb honey is good for two colonies, but 6 swarms is too many for best results unless one wants increase more than honey.

Attracting Bees—Best Race

1. Is there anything known to be of value in enticing or drawing bees to a decoy hive other than a hive with drawn combs or foundation?

2. Which do you consider the best all-around breed of bees for this locality? ILLINOIS.

Answers.—1. No.

2. The Italian bees.

Uniting

Having a couple of colonies which I thought had been weakened by winter, I followed your advice and put one on top of the other, first putting a sheet of paper between.

I find, however, that the bees do not leave their comb and go into the lower hive-body, which was my intention, as I wanted to use the vacated body.

As they are likely to swarm any time, I would be much obliged for your advice as to how to handle them now. Whether to take the top body off or smoke them out, or what. WASHINGTON.

Answer.—You evidently did not kill the queen of the weaker colony, else they would have united to one another readily.

If they are strong enough that you fear they will swarm, it may be as well to again separate them, especially if they both have brood and queens. But when you examine them you may find them in different condition from your expectation.

If you still want them united, open the top hive, find the queen and kill her. They will join the others without trouble then.

Old Combs—Honey Plants

1. Is it best to remove black comb and replace with foundation or drawn comb?

2. Can you tell me where I can get the dimensions for a double-walled hive?

3. Is timothy a honey plant? How about vegetables and grains?

4. I started to clip my queen's wings the other day, but on finding her I discovered she had both her wings together on her back. How can I separate them, and what is best to clip them with?

5. What is the best method of hiving a swarm?

6. What stimulates brood-rearing and makes them more active, entrance feeding or over the frames?

7. Should the bees be gone over once in spring and then let alone until time for cutting out queen-cells, putting on supers, etc.? OREGON.

Answers.—1. No; so long as they are perfect worker-combs, their blackness and age are not objectionable. Indeed, the bees prefer old, black combs.

2. Probably from the manufacturers or those who sell them.

3. Timothy yields much pollen, but no nectar. Some vegetables are fine honey-plants, as beans and onions, but are of little consequence in ordinary gardens because in too small quantity. The large bean fields in California are very important. Except buckwheat, I don't know that the grains amount to much for honey.

4. When a queen's wings are at rest they are always folded together on her back. Slip the scissors under the wing at one side, and you will find it easily raised. A pair of small scissors of almost any kind is good for clipping. Embroidery scissors are much used. I prefer blunt-pointed scissors, not because they do better work, but because I carry them safely at all times in my trousers pocket.

5. That's a question for your bee-book, and hardly belongs in this department. After you have had full instruction you will still be guided by your common sense. If your queens are clipped, a good way is to move the old hive to a new stand, set an empty hive on the old stand, and let the returning swarm hive itself.

6. Either way is good. Feeding near the entrance may cause robbing.

7. Depends on your plan of management. Some do not open the hives till time to put on supers, and some open them a number of times, depending on what is to be done.

Demaree Plan—Excluders, Etc.

1. To what extent do you believe in resorting to the Demaree treatment for swarm prevention?

2. Does the presence of nurse-bees in the lowest story militate against attainment of the rest desired therewith?

3. What, if anything, seems best to do to get these nurse-bees out from that lowest story, especially when one has at least two hive-bodies upon excluder, the latter on that lowest hive-body?

4. Do you believe that with having but the excluder to pass through, the aforesaid nurse-bees would persist in remaining below, when it would seem that they would know even better than any human being that there was brood above? For, do not the nurse-bees just love to be with the brood—or is there no need of them with capped brood?

5. Then again, if the queen under the excluder lays and, of course, soon then larvæ appear, is it not self evident that the nurse-bees would devote themselves to the latter, and so they would have to stay below? Some one asserts that the nurse-bees, if remaining below, are apt to nullify the aim of the Demaree procedure.

6. As to No. 197, page 92, of Dadant-Langstroth, 1911; all I can recognize about brood is whether it is capped or uncapped—of the lines 3, 4, 5, where the respective days are given—which of these lines, embrace one or the other, viz.: capped or uncapped?

7. Addenda: I must acknowledge that the Demaree treatment both in 1918 and 1919 seemed not much of a success, in that while there was honey over excluder, the queens below did next to nothing, and the bees scarcely built out any foundation in the lowest story. The colonies I had last year for extracted honey averaged \$10.50; there seemed a fair number of bees, but very little work in the lowest story. I fixed up each colony with a liberal amount of stores, yet "wonder" how they will look this spring. PENNSYLVANIA.

Answers.—1. It is probably the best for the

man with small brood-chambers, though the methods for swarm prevention are numberless, and often useless.

2, 3, 4 and 5. The nurse-bees stay below because that is where they are needed. When the brood is capped, there is nothing needed but warmth and, since heat ascends, it is sure to get it. The freshly hatched larvæ need attention until they are sealed. The nurse-bees must stay below.

6. From the spinning of cocoon the cell is sealed. Cheshire writes: "At this time (after four days' feeding), its weight (the larva) is scarcely less than double that of the bee into which its natural transformations will by and by convert it. No more food is supplied and the period for cocoon spinning approaches. . . . Before the cocoon can be built, a cover, technically called sealing, is put over the larva by its nurses, that now bid it farewell."

7. Probably the fault was not with the Demaree treatment but with the season. But when there is plenty of room for honey above and lots of brood below, it is natural for the bees to put very little honey near the brood, especially if the weather is warm.

Metal Combs, Extracting Super Division Board

1. There are so many discussions going on in the bee journals of late about wiring brood frames. We hear about the "money comb," (aluminum comb), which is much advertised and is praised by some beekeepers. The question arises with me as to whether bees will build queen-cells on or in a metal comb. I think not. An idea struck me why our wax foundation manufacturers are not trying to make foundation, *not full comb*, out of aluminum. If this metal foundation is coated with hot wax I do not see why bees should not begin to draw out cells of wax on them. This foundation could be wedged to the top bars just as easily as wax foundation. The bottom-bars will need a slit in them to suspend the foundation between the two strips of the bar. The metal must come also in contact with the end bars so bees can wax same to the bars. So we would have a rigid septum for our wax combs, and if they should become old or damaged the wax can be scraped off on either side and the aluminum again coated with hot wax. I painted a piece of bright tin with hot wax and then exposed it to a temperature below zero and found no trace of cracking in the wax. If this was never tried before, will some foundation manufacturer give it a good trial? The contraction of cold and expansion of heat will have very little effect.

2. In a case of shortage an extracting super can quickly be arranged to a section super and placed between sections if three or four strips of wood are laid across the beeways to serve as bridges, and bees will not build combs in the space, but will climb up on the strips to the next super.

3. Is it advisable to put a division-board in a hive and put two weaklings, one on each side, with both queens to lay, and when they build up put a queen excluder on top of hive and a super over the excluder for both parties to meet? Before honey crop, remove one queen, the poorer one, and let the bees unite. Will the bees fight? Of course, I want to make a wire cloth frame division. MINNESOTA.

Answers.—1. The metal comb needs to be tested for 2 or 3 years before positive statements can be made concerning it. In reply to a number of inquiries we had prepared a statement giving the pro and con, the qualities and defects, *presumed*, of this metal comb. Among the qualities we had placed its being proof against mice. But to our great astonishment a comb was brought to us which had been filled with honey by the bees and had been entirely cut up by mice, to get at the honey. So it is useless to try to give the qualities and defects of these combs until we know them ourselves, positively.

As to the foundation of metal, it was tried years ago and abandoned. If you think you have an idea, try it yourself. Similarly, why

not try a hive full of those metal combs? You will then be in a position to give the arguments on both sides. But do not be hasty in deciding. Take time to make sure.

2. Your suggestion may work.

3. If the two colonies become strong, I would much prefer separating them and keeping both queens going. But if one of the queens is inferior, remove her at the opening of the crop. The bees will not fight if there is honey in the fields.

Swarms—Drones

What makes a swarm come out and settle and when hived go on back to the old hive? Are the big black bees the drones? What kind of a looking bee is the queen?

SOUTH DAKOTA.

Answer.—If anything is wrong with the queen's wings so she cannot fly, the swarm will return to the hive when they find the queen is not with them. They may continue this daily (provided the queen finds her way back each time) until the first virgin emerges, when the swarm will take French leave with her, if not properly hived.

The great majority of the bees in a hive are workers, and the drones are easily recognized by being so much larger. The queen, when in full laying, looks very much larger than a worker, the greater size, however, being chiefly caused by the larger abdomen.

Foundation

1. Does it require any honey for bees to draw out comb from full sheets of foundation, as much as it does to make their own comb from beginning, or is the loss of time the only loss when bees have to draw their comb from foundation?

2. If a colony of bees produces 100 pounds of surplus extracted honey in one season when furnished only full sheets of foundation in the surplus apartment, what should the same colony produce if given combs fully drawn out?

ALABAMA.

Answers.—1. Yes, there is a loss of material as well as time when the bees are obliged to furnish the septum themselves; and every pound of wax the bees have to furnish means five to twenty times as many pounds of honey.

2. I don't know. It varies, no doubt, greatly. In a very slow yield the difference between foundation and full combs may not be great, but in a heavy flow many pounds of honey may be lost while the foundation is being made into full combs.

Moving

In moving bees in summer a mile or two by truck, would be sufficient to tack a screen over the top of the hive and nail a board over the entrance? The entrances to my hives are 2 inches, and somewhat difficult to close. Would this be sufficient, also, moving them in October, by truck, 60 miles or more? INDIANA.

Answer.—Yes to both questions, provided the screen be the full size of the top of the hive; only, if the moving be in the heat of the day, and the weather be very hot, it will be safer to have a frame for the screen to be tacked on, so as to leave a space of two inches or so over topbars for the bees to cluster in.

Queens

1. Sometimes queen-cells are formed at the bottom rim of the comb, in such a way that growth, as it were, against the upper rim of the top-bar makes them curved, especially when they happen to be near a corner. If otherwise such cells appear well developed will they furnish as good queens as cells so situated as to grow without any such obstructions?

2. To what extent is it essential (if at all necessary) that when queen-cells are given from another colony (sealed ones), this should be done in a protector? In giving such cells my practice has always been to give the whole frame with whatever brood there is on it. I can scarcely see how, as just stated, in most cases a protector could be applied. By pro-

teCTOR I mean a West queen-cell protector. Or is there another sort of protector meant?

3. I feel tempted to apply the "put-up" plan, with the modification of placing the hive with the queen, one frame of brood and foundation quite a distance away from the hive site, and after the lapse of ten days do as it seems best to me—either give the queen back or not. I might favor letting the bees on the old stand have a chance of rearing a new queen. However, if one chooses to go at returning the old queen, with her bees with her, could she be put back, or would one have to proceed the same as when introducing a new queen?

4. When a hive of brood without queen and with a ripe or nearly ripe queen-cell is left to itself, there not being more than that one queen-cell, to what extent is there danger that there be swarming with first flight of the emerging virgin? PENNSYLVANIA.

Answers.—1. I should expect just as good a queen from a cell forced into a horizontal position, provided there is plenty of room for horizontal extension. If room were lacking to allow the cell to be extended horizontally enough for the queen to grow to full size, the queen might not be so good. However, I never saw such a cell, although I've seen a good many horizontal cells.

2. If a cell is given to a colony just dequeened, or at any time before it has discovered its queenlessness, especially in a time of dearth, unless a protector is given (I don't know of any protector but the West) the bees are likely to destroy the cell. You say you always give "the whole frame with whatever brood there is on it." I don't know that that would make the cell any safer. I half suspect that you mean with whatever bees are on it. That would make a difference, and perhaps if a goodly number of bees were adhering there might be no need of a protector.

3. Yes, the old queen may be returned just as safely at the end of ten days after being several rods away. I've tried it a good many times.

4. I don't know to what extent, but I think there is more likelihood that bees will swarm out with a virgin on her wedding flight in case of a nucleus than in case of a full colony, but they will generally return.

Moving Bees

1. I am contemplating buying about five colonies of bees from a man three-quarters of a mile from here. How would you move these bees? Would the move hinder the gathering of honey?

2. He has the bees in 10-frame dovetailed hives, with shallow extracting super on each. If I wish to run for comb honey will I have to buy other supers? I want to use the 4¼x4¼x1½ two beeway sections.

MISSISSIPPI.

Answers.—1. You can move them either by horse power or with an automobile. Close the entrances with wire-cloth in the evening, after the bees have stopped flying, or else in the morning before they have begun flying. After setting on the new stands, and immediately after removing the screen from the entrances, set a board in front of the hive for the bees to bump against when they first fly out. This will help to make them mark their new location, so as not to return to the old one. Better not open the entrance too early in the morning. Wait till the sun is well up, or till 9 or 10 o'clock (I am supposing this in warm weather), and if the bees are quiet pound on the hive and set the bees roaring before opening the entrance. The moving will not hinder the bees from gathering afterward.

2. You can use other supers, or you can use the extracting supers by using "wide frames."

Poisonous Nectar

I moved 26 hives near the jungles and they were getting along fine until about May 5th. At this time I noticed a peculiar action of the bees; they would stand up on their hind legs

and would quiver, the tail would cramp up to the body, and on thorough inspection I found them trying to get into a close place where they could straighten out. At first I thought it was a disease, but after inspecting the balance of the hives I found them all acting the same. It appeared that they were cramping severely, and they would quiver to the edge of the landing board and drop on the ground, which was covered with dead and alive bees. The above lasted for two weeks, and I lost almost half of my bees, and three queens during this period. Another thing, it did not affect the old bees only; the newly hatched seemed more numerous than the old ones. I have talked to some of the other beekeepers here and they say they have had the same thing happen to them almost every year, and they believed it to be a poisonous nectar. Have you ever heard of this before? The bees at this time were gathering a very light flow of reddish nectar and plenty of pollen.

BALBOA, CANAL ZONE.

Answer.—It is possible that it may be poisonous nectar, but I doubt it. It looks a good deal like bee paralysis, only you do not mention the peculiar trembling of the wings, which is quite conspicuous. Sorry I cannot give you a more definite answer.

Age of Queens

1. Can you tell by the general appearance of a queen how old she is, and how?

2. I have my bees in 10-frame hives (Hoffman) and 20 frames per colony at present and use both extracting frames and 4x5 inch sections in the supers; gave one the third hive body a few days ago and they were crowded for room. It has 30 brood-frames and 10 extracting (shallow) frames; no queen-cells even started. What else could I do to prevent swarming? Run in that way in 1919, I had but one swarm in 13 colonies and took 160 to 180 pounds surplus from the best ones. Was that sufficient surplus, or would I have had more if I allowed one swarm?

3. Some three days ago we had one colony that seemed to be trying to swarm, but didn't. The next day there was a dead queen in front of the hive. Was it a superseding of the queen caused the uproar? Five days after that they swarmed. I looked in the old hive and

found several queen-cells started with grubs, 3 sealed up and 1 just hatched, and saw a new queen just coming out of a queen-cell, I destroyed all the grubs and sealed-over cells except 2 and took the queen away. No worker eggs in the hive. Would it have been better to let the queen go and take out all the cells? The reason I took the queen away was because I thought perhaps the one from the other cell was in the hive, although I did not see her. This hive had 20 brood-frames, but no super.

4. I have noticed the articles in American Bee Journal regarding wiring of frames. Will enclose sample of wire I use and have no trouble with sagging when four are put in; also two diagonal ones. The diagonal wires are on one side of the foundation and the parallel on the other and the foundation is fastened in good at the top-bar. This takes considerable time, but it pays. The enclosed sample of wire is waste with me, being secured in my dynamite blasting work. I figure it costs nothing. I do not know what gauge it is, but if your other correspondent is right in saying use heavier wire, I find it a success, also.

S. DAKOTA.

Answers.—1. Usually an old queen has less hair than a young one; so, like an old worker bee, she is more shiny. She is also less active. But for all that, we have mistaken a young queen for an old one and vice versa. Better have your queens marked by clipping or otherwise. Then you will know their age.

2. Yes, that would be very fine, even if you could not average more than half of that, one year after another. There are two or three additional points to help keep your bees from swarming: shade, ample ventilation, few drones, and young queens. You would probably get less honey if you allowed them to swarm.

3. It is very difficult to tell whether they were superseding their queen or whether she died from accident. But it is evident that the old queen died. You would have gained a little time by leaving one live queen in and de-

stroying queen-cells. But the difference is almost unimportant.

4. The wire of which you send sample is copper wire, No. 22. Such wire as that would be exceedingly expensive for a beekeeper to use. But the size is an advantage. When it is imbedded by electricity it does not matter whether it is put on one side or on both, as it sinks well into the foundation.

Molasses for Feed

Would molasses, such as is fed to cattle, be a good substitute for sugar for winter feeding, and how much should it be diluted?

DELAWARE.

Answer.—Molasses may do to feed bees in the summer, if they will take it. But it would not do to have any quantity of it in the combs, as it would be very objectionable if it were mixed with honey. Usually bees refuse to take it, unless they are starving.

For winter, molasses is deadly to the bees, owing to the large amount of foreign undigestible matter which it contains. The bees need the purest honey for winter, or in lieu of it, a syrup made of the very best sugar.

Unripe Honey

When should a fellow extract honey? Will honey sour if extracted about the 10th of July? What does one do to keep honey from souring?

INDIANA.

Answer.—Extract honey when it is ripe, that is when the bees seal it and its consistency is thick enough to show that it does not contain much water. If it is ripe, it will not sour in the hottest weather. If it is not ripe, it will sour at some time or other. To keep it from gathering moisture and becoming thin again, as it was when gathered by the bees, keep it in a warm, dry place. A cellar is the worst possible place to keep honey. Better have it in the attic, or in a warm, dry room.

HONEY

WANTED

HONEY

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NEW YORKERS MEET

The annual summer meeting of the Western New York Honey Producers' Association was held at West Valley, N. Y., and was attended by about two hundred beekeepers, and all enjoyed a very pleasant day. Among other prominent speakers present were Mr. E. R. Root, of Medina, Ohio, and Mr. R. F. Holterman, of Canada.

OKLAHOMA FAIR

The Oklahoma Free State Fair will be held at Muskogee, Okla., the week of October 4-9, 1920.

A large exhibit of products of the apia and of beekeepers' supplies is desired, and to this end a premium list of \$437 is being offered.

Competition is open to the world. Here is an opportunity for beekeepers to advertise their products and help the industry at large by exhibiting honey in its different forms in appetizing packages.

Ask Ethel Murray Simmonds, Secretary of the Oklahoma free State Fair, at Muskogee, Okla., or the undersigned, for a premium list.

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FOR SALE—Bees, Italian; 150 colonies in new 10-frame dovetailed hives, Hoffman frames, full sheets, wired; no disease, \$9 per colony as they stand in the apiary here.

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7906 Independence Road, Kansas City, Mo.

FOR SALE—50 colonies of Italian bees (3-banded stock) in regulation 10-frame hives. All my bees are, and always have been, free from foulbrood. Address,
Rev. F. D. Brown, St. Maries, Idaho.

FOR SALE—Queens of Dr. C. C. Miller strain; untested, \$1.25 each, \$12 per dozen; tested, \$1.75 each, \$18 per dozen. Safe delivery and satisfaction guaranteed.

Geo. A. Hummer & Sons,
Prairie Point, Miss.

FOR SALE—Three-banded Italian queens; untested, \$1.25 each; 6, \$6.50; 12, \$12. Select untested, \$1.50 each. Satisfaction guaranteed.
W. T. Perdue & Sons,
R. No. 1, Fort Deposit, Ala.

GOLDEN and 3-banded queens in reasonable quantities by return mail; 1, \$2; 6, \$10.
Allen Simmons, Claverack, N. Y.

FOR SALE—Goldens that are true to name. Select untested, one, \$1.50; 6, \$7.50; 12, \$13.50; 50, \$55; 100, \$100.
Garden City Apiaries, San Jose, Calif.

THE ITALIAN QUEENS OF WINDMERE are superior three-banded stock. Untested, \$1.50 each, 6 for \$8. Tested, \$2 each. Select tested, \$2.50 each. Virgins, \$1.
Prof. W. A. Matheny, Ohio University,
Athens, Ohio.

PURE ITALIAN QUEENS—Golden or leather colored, packages and nuclei; 1 untested queen, \$1.50; 6, \$7.50; 12, \$13.50; 50, \$55; 100, \$100; virgins, 50c each; packages, 24 and under, \$2.25 per pound; 25 and over, \$2 per pound; nuclei, 1-frame, \$4; 2-frame, \$6; 3-frame, \$7.50; queens extra. One-story 10-frame colony with queen, \$12.
Golden Star Apiaries,
Almaden, near San Jose, Calif.

FOR SALE—Select golden Italian queens by return mail. Untested, \$1.50 tested, \$2.50.
Wallace R. Beaver, Lincoln, Ill.

QUEENS OF QUALITY—Our Hand-Moore strain of three-banded Italians are beautiful and good honey gatherers. Bred strictly for business. Untested, \$1.50; half doz., \$8; select, \$2. W. A. Latshaw, Clarion, Mich.

FOR SALE—Highest grade 3-banded Italian queens, ready June 1. Queens and drone mothers are selected from stock of proven worth in hardiness, gentleness, honey production and disease resisting qualities. Untested, each, \$1.25; 6, \$6.50; 12, \$12; 50, \$47.50; 100, \$90. Your correspondence will receive prompt attention, and I guarantee satisfaction.
A. E. Crandall, Berlin, Conn.

WHEN BETTER QUEENS are raised Victor will raise them. Italians, mated, \$1.25 each; six, \$7; twelve, \$13.50.
Julius Victor, Martinsville, N. Y.

FOR SALE—Large, hardy, prolific queens, 3-banded Italian only. Pure mating and safe arrival guaranteed. One queen, \$1.30; 6, \$7.50; 12, \$13.50; 100, \$110.
Buckeye Bee Co., Box 443, Massillon, Ohio.

FOR SALE—My famous three-banded Italian queens, \$1.25 each, six for \$7, from June 1 to November. J. W. Romberger, Apiarist,
1113 Locust St., St. Joseph, Mo.

BOOK YOUR ORDERS for QUEENS now—Goldens, \$2; tested, \$3; banded, \$1.50; tested, \$2.50; six or more 10 per cent less.
Clover Leaf Apiaries, Wahoo, Neb.

FOR SALE—Hardy Italian queens, \$1 each
W. G. Lauver, Middletown, Pa.

MOTT'S Northern Bred Italian Queens— I have breeding mothers place in the south for April and early May queens. Plans "How to Introduce Queen and Increase," 25c. If you want beauty with the best of summer and winter laying birds, try a setting of my Golden Campines.

E. E. Mott, Glenwood, Mich.

FOR SALE—Superior California Queens— Western beekeepers may now secure our famous Italian queens at the following prices: One untested, \$1.25; fifty untested, \$57.50; one hundred untested, \$100. Orders filled in rotation; first deliveries March 1, 1920.
Edson Apiaries, Gridley, Calif.

FOR SALE—Golden and three-band queens. Untested, April, May and June delivery, \$1.25 each; \$13.50 per doz. Satisfaction.
R. O. Cox, Rt. 4, Greenville, Ala.

1920 PRICES for "She Suits Me" queens. Untested Italian queen, from May 15 to June 15, \$1.50 each. After June 15, \$1.80 each; \$13.50 for ten; \$1.10 each for 25 or more.

Allen Latham, Norwichtown, Conn.

FOR SALE—After April 15, our golden Italian queens, untested, one \$1.50 or \$15 per doz.; select untested, one, \$1.75 or \$18 per doz.; tested, \$3 each. Safe arrival guaranteed.
Tillery Bros.,
R. 5, Georgiana, Ala.

BEEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
14th St. 84 Cortland St., New York City.

"QUALITY" THREE-BANDED ITALIANS from excellent stock; untested queens, 1, \$1.50; 6 for \$7.50; 12 for \$13.50; 50 for \$55; 100 for \$100.
N. J. James,
1185 Bird Ave., San Jose, Calif.

BEEES BY THE POUND, ALSO QUEENS— Booking orders now. Free circular gives prices, etc. See larger ad elsewhere.
Nueces County Apiaries, Calallen, Texas,
E. B. Ault, Prop.

HONEY AND BEESWAX

See Atwater's classified honey adv't.

FOR SALE—New crop clover extracted honey, two 60-pound cans to case, \$30 per case; 5-pound pails, \$1.50 each, packed 12 pails to case, or 30 to 50 to barrel.
H. G. Quirin, Bellevue, Ohio.

FOR SALE—Finest quality clover extracted honey, well ripened and of a good flavor, in 60-pound cans, two to the case, at 25c per pound f. o. b. here. Also 500 cases of No. 1 comb honey.
J. D. Beals, Oto, Iowa.

FOR SALE—Honey in glass or tin.
W. M. Peacock, Mapleton, Iowa.

FOR SALE—250 gallons of light amber honey, packed in 60-pound cans two in case. Make offer.
Vernon H. Jeffries,
Tunica, La.

FOR SALE—About 12,000 pounds extracted clover and basswood honey, in 60-pound cans. What's your offer?
Edward Wilbright,
Rt. 5, Box 22, Preston, Minn.

ONTARIO QUEENS

We are in a position to make immediate delivery of three-banded Italian Queens at following prices

	1	6	12	25	50	100
Untested	\$1.50	\$ 8.50	\$17.00	\$35.00	\$70.00	\$137.50
Select Untested	1.75	10.00	20.00	41.00	80.00	155.00
Select Tested	5.00	25.00	48.00			

RUMFORD & FRETZ
BOX 193 SARNIA, ONT.

LIQUID HONEY—Basswood and clover, 25c lb.
Lake Sarah Specialty Farm,
Rockford, Minn.

FOR SALE—Finest Michigan raspberry, basswood and clover No. 2 white comb, \$6.50 per case; No. 1, \$7; fancy, \$7.50; extra fancy, \$8, 24 Danz. sections to case. Extracted, 60-lb. cans, 25c per pound.

W. A. Latshaw, Clarion, Mich.

WANTED—Extracted and comb honey in bulk or tin, or glass jars; also maple syrup.
Paul Thomae 1131 3rd St., Milwaukee, Wis.

GRANULATED HONEY ADS. \$1 per thousand; 100, 20c.
Dr. Bonney,
Buck Grove, Iowa.

FOR SALE—About 40,000 lbs. fancy white clover honey; price f. o. b. Kalona, Ia., case, 2 60-lb. cans, 22 cents a pound; case 1 60-lb. can, 23 cents a pound. Sample bottle by mail, 20 cents
J. M. Gingerich, Kalona, Ia.

WANTED—Beeswax. At present we pay 38 cents per pound in cash and 40 cents in trade for clean, yellow wax, delivered Denver.
The Colorado Honey Producers' Association,
Denver, Colo.

HONEY—Supply your customers, finest alfalfa-clover honey, extra strong cases, probably ready in July.
E. F. Atwater, Meridian, Idaho.

WANTED—Extracted honey. State how packed. Send sample, lowest cash price.
P. Outzen, White Bear Lake, Minn.

FOR SALE—Clover and buckwheat honey in any style container (glass or tin). Let us quote you.
The Deroy Taylor Co.,
Newark, N. Y.

WANTED—White clover or light extracted honey. Send sample; state how honey is put up and lowest cash price delivered at Monroe; also buy beeswax.
E. B. Rosa, Monroe, Wis.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering. Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

WANTED—Comb and extracted honey.
The L. H. Snider Apiaries, Auburn, Ind.

A NEW BEE BOOK

"Dadant's System of Beekeeping"

Ready next month.

Watch for our announcement.

FOR SALE

See Atwater's classified honey adv't.

FOR SALE—Sixty 10-frame, standard, lap-joint, double walled bodies; 50 tops, 50 bottoms; good condition, \$125.
Roland Adams, Montgomery, Mich.

FOR SALE—25-20 Winchester in perfect condition, guaranteed.
Edward Hogan, Stanley, N. Y.

FOR SALE—Root 4-frame friction drive extractor and honey pump, used one season; complete outfit, \$75. Ninety wood and wire queen excluders; some have never been used, 40c each for the lot.
Ed. Swenson, Spring Valley, Minn.

FOR SALE—280 Dadant's deep, loose, hanging brood frames; size 10 1/4 in. deep, 20 1/4 in. wide; nailed and wired for foundation; \$30 takes the lot, f. o. b. address. Also 50 Dadant brood frames, drawn comb, at 50c each, 10 1/4 x 20 1/4.
Chas H. Sladek, North Chicago, Chicago, Ill.

FOR SALE—Silver Spangled Hamburg chickens; best layers on earth.
Elias Fox, Union Center, Wis.

FOR SALE—Cedar or pine dovetailed hives; also full line of supplies, including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

FOR SALE—"Superior" Foundation (Weed process). Quality and service unexcelled.
Superior Honey Co., Ogden, Utah.

SUPPLIES

See Atwater's classified honey adv't.

NOVICE EXTRACTORS, \$22. More bargains. Save money.
R. Kramske, 1104 Victor St., St. Louis, Mo.

60-POUND CANS—150 cases, 2 per case, at \$1.60; will exchange for comb or extracted honey if price is right. J. A. Nininger,
Hutchinson, Kans, 1526 N. Washington.

FOR SALE—Good second-hand double-deck comb honey shipping cases for 4 1/4 x 4 1/4 x 1 1/4 sections, 25 cents per case, f. o. b. Cincinnati; terms cash with order.
C. H. H. Weber & Co.,
2146 Central Ave., Cincinnati, O.

FOR SALE—Good second-hand empty 60-lb. honey cans, two cans to the case, at 60c per case, f. o. b. Cincinnati. Terms cash with order.
C. H. H. Weber & Co.,
2146 Central Ave., Cincinnati, O.

SEND us a list of goods wanted and will quote you lowest prices. We are the money-saving house. Price list free. Try us.
H. S. Duby & Son, St. Anne, Ill.

SITUATIONS

See Atwater's classified honey adv't.

WANTED—Work in apiary by German-American, Catholic. State wages.
C. Prescher, Box 1003, Huron, S. Dak.

WANTED—One or two good queen-rearing men to begin work February 15, 1921.
Nueces County Apiaries, Calallen, Texas.

WANTED—Beekeeper for apiary at Lilly Orchard; married man able to grade and pack fruit preferred. Come and get a job during apple picking and size up the location. Can give work in orchard when not busy with bees.
H. W. Funk, Normal, Ill.

WANTED

See Atwater's classified honey adv't.

WANTED—An extractor in good condition.
W. Winslow Shearman,
Jamestown, N. Y., Route 77.

HONEY WANTED in car load lots or less. Send samples and price.
Chris. Bach, Cathay, N. D.

WANTED—Clover, basswood, buckwheat and amber extracted honey in 60-pound cans.
P. Carter, Box 13, Elmhurst, Pa.

WANTED—White clover comb honey of high grade.
Merton Church,
Highland Park, Ill.

WANTED—Honey, comb and extracted. State quantity and price, and send sample of extracted.
A. W. Yates,
15 Chapman St., Hartford, Conn.

WANTED—Your old combs, cappings and slumgum to render into beeswax. We get enough more wax with our well equipped presses to pay for our work.
Dadant & Sons, Hamilton, Ill.

WANTED—Your order for "Superior" Foundation. Prompt shipments at right prices.
Superior Honey Co., Ogden, Utah.

MISCELLANEOUS

See Atwater's classified honey adv't.

NEW ZEALAND RABBITS, Red Carneaux pigeons; fine stock; for sale or exchange for Italian bees, full colonies or less.
C. L. Gill, Route 1, Fort Worth, Texas.

FOR SALE—My home place, 53 acres, 200 colonies bees (40 colonies on Illinois River at Florence); all my bee fixtures, my good will in my honey trade. Half cash, balance on time.
W. H. Hyde, New Canton, Ill.

FOR SALE—Two 10-acre tracts of land near Ironton and Pilot Knob, Mo. First tract has 3-room log house with large stone porch, good well, stable and 5 acres in young bearing orchard, vineyard and berry fruits. (Marketed over 500 quarts of berries last season). Second tract has 5 acres under cultivation for farming. Price, including Jersey cow and 4 hives of bees, \$1,400, if sold before October.
M. T. Allen, Pilot Knob, Mo.

WRITE for shipping tags and our prices for rendering your old combs, cappings, etc. We guarantee a first-class job.
The Deroy Taylor Co., Newark, N. Y.

BLACK SIBERIAN HARES—Enormous sizes, delicious meat and beautiful fur. Write for information and prices.
Siberian Fur Farm, Hamilton, Canada.

HONEY FINEST Michigan Raspberry Basswood and extracted honey. Unexcelled for quality.
Crate 6 cases 24 sec. Fancy Comb \$45.00
Crate 6 cases 24 sec. A No. 1 Co'b 42.00
Crate 6 cases 24 sec. No. 2 Comb 39.00
Crate 6 cases 24 sec. Extra Fancy 48.00
Two cans 120 lbs. Extracted.... 30.00

Send Today for Free Sample

W. A. LATSHAW COMPANY, Clarion, Michigan

A NEW BOOK

"Dadant's System of Beekeeping"

Ready next month.

Watch for our announcement.

PURE ITALIAN QUEENS

The old reliable three-banded stock bred strictly for business. My select untested are laying before being caged. Price after August 1, \$1.50, 12 or more \$1.25 each. Tested \$2.00, breeders \$5.00. Circular free.

J. E. WING, San Jose, Calif.

155 SCHIELE AVENUE

"falcon" Stands for Quality

CERTAINLY prices are high today, but don't make the mistake of buying LOW PRICE goods. Don't compromise with quality.

"falcon" bees and supplies are quality products, backed by 40 years of satisfactory service. Experienced beemen, in this country and abroad, recognize them--buy them--are successful with them. You'll get the same good results.

Write for Our Red Catalog

W. T. FALCONER MANUFACTURING COMPANY

Falconer (near Jamestown), N. Y., U. S. A.

"Where the best beehives come from"

QUALITY HILL QUEENS

"The Queens You'll Eventually Buy"

Choice tested "Quality Hill Queens" of pure Italian stock, suitable for testing as breeders to requeen your yards with daughters of this famous strain, are offered beginning September 1.

"Quality Hill Queens" are known to many beekeepers as the result of crossbreeding of imported and fine domestic stocks gathered during months of travel among America's better beekeepers. Orders in rotation only.

Safe arrival, purity of mating and satisfaction.

Price: \$3.50 each. Supply limited.

KENNITH HAWKINS

WATERTOWN, WISCONSIN

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The only Canadian bee publication. Keeps beekeepers closely in touch with Apicultural conditions in Canada. It is the official organ of the Beekeepers' Associations for the three provinces—Ontario, Manitoba and New Brunswick. Beekeeping and horticulture are effectively combined to make a live, attractive and practical publication.

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LEWIS BEEWARE DADANT FOUNDATION ALUMINUM HONEY COMBS

**THESE ARE THE GOODS WE CARRY
IN STOCK FOR PROMPT SHIPMENT**

LEWIS BEEWARE—Built like furniture. Every piece of wood carefully selected. Workmanship and quality strictly guaranteed. Your bees deserve the best and LEWIS "BEEWARE" is the best.

DADANT FOUNDATION—This has been the standard for over twenty years. Every sheet guaranteed perfect. No bleaching or adulteration of wax. No revolutionary change has to be made to make DADANT FOUNDATION continue to remain what it always has been, the most perfect foundation made.

ALUMINUM HONEY COMBS—The newest and most important addition to beekeeping equipment. Perfect control of drones; elimination of danger from wax moth; safety in treating disease.

WRITE FOR OUR CATALOG

TEXAS HONEY PRODUCERS ASSOCIATION

1105 S. Flores St.

P. O. Box 1048

San Antonio, Texas



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Bee Keepers' Supply Mfg. Plant.

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The largest and oldest Bee Supply manufacturer in Minnesota can offer you BEEWARE that will keep that "satisfied smile" on your face. Excellent quotations given on frames, spacing or unspacing. Write to MONDENG about hives and supers. Made of polished white pine.

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Send for my 1920 Catalog and Price List.
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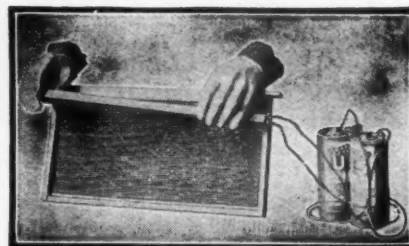
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or J. W. ROUSE, Mexico, Mo.



ELECTRIC IMBEDDER.

Price without Batteries \$1.25
Not postpaid.

Actually cements wires in the foundation. Will work with dry cells or with city current in connection with transformer. Best device of its kind on the market.

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Dadant & Sons, Manufacturers
HAMILTON, ILL.



PAT. JULY 30, 1918

C.O. BRUNO NAILING DEVICE

Made for the Huffman Brood Frames. A combined Nailing, Wiring and Wedge Clamping Device. Has been tried and is guaranteed to do accurate work.

PRICE \$7.50

Complete directions for operating are furnished with each device.

Manufactured by C. O. BRUNO
1413 South West Street, Rockford, Illinois

PRICES OF QUEENS

	Nov. 1 to June 1			June 1 to Nov. 1		
	1	6	12	1	6	12
Untested	\$2.00	\$9.00	\$16.80	\$1.50	\$8.00	\$14.50
Select untested	2.25	10.50	18.00	2.00	9.50	16.00
Tested	3.00	16.50	30.00	2.50	12.00	22.00
Select tested	3.50	19.50	36.00	3.00	16.50	30.00

Breeders \$7.50 to \$15.00

Queens for export will be carefully packed in long-distance cages, but safe delivery is not guaranteed.

"The queen that I got from you last season made honey when the other bees were taking lunch to the fields with them (when they went at all)".

H. M. TICHENOR, Centertown, Ky.

2058 Yonge St., Toronto Canada March 19, 1920.

Friend Davis:

The colonies headed by your queens are through this far in fine shape. It was a pleasing sight to see them take their first flight (after 4 months) this last week. What is the price of queens to us folks on this side this year, and when could you start to send me up some? A reply would oblige

Yours Respectfully,

P. F. OLIVER.

No Nuclei, Full Colonies or Pound Packages.

BEN G. DAVIS, Spring Hill, Tenn.

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We manufacture millions of sections every year that are as good as the best. The **cheapest** for the **quality**; **best** for the price. If you buy them once, you will buy again.

We also manufacture hives, brood-frames, section holders and shipping cases.

Our Catalog is free for the asking

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We have in stock an over supply of the following sizes and are offering them at a big reduction—while they last. These sections are of a very good grade and mostly standard sizes. For lack of warehouse room, we are sacrificing them at the following low prices:

	Per	M.
No. 2—4¼x4¼x1¼, two beeway	\$10.00	
No. 2—4¼x4¼x1½, two beeway	10.00	
No. 2—4¼x4¼x1½, plain or no beeway	9.00	
No. 2—3¾x5x1½, plain or no beeway	9.00	
No. 1—4x5x1 7-16, plain or no beeway	10.00	
No. 2—4x5x1 7-16, plain or no beeway	9.00	
Mill Run, 4x5x1 7-16, plain or no beeway	9.70	

The above prices are net, cash with order. Sold in lots of not less than 1,000.

We are well prepared to fill all orders for Bee Supplies promptly. Send us your inquiries and we will be pleased to quote you our prices. Send us your name and address and receive our next season's catalog and price list when same is published.

AUGUST LOTZ COMPANY, Boyd, Wisconsin



ITALIAN QUEENS



The Old Reliable Three-Banded Italians. The best allround bee to be had. Queens ready to mail April 1. Will book orders now. Will guarantee safe arrival in United States and Canada. Prices for April and May:

Untested, \$1.50; 6, \$8; 12, \$15

Tested, \$2.25; 6, \$12; 12, \$22.

Select tested, \$3 each.

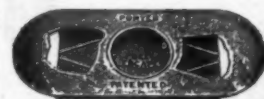
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JOHN G. MILLER,

723 C Street, Corpus Christi, Texas.

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MONEY**



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Lewistown, Illinois, U. S. A.

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American Bee Journal

BEES

We furnish full colonies of Italian bees in double-walled hives, single-walled hives, shipping boxes and 3-frame nucleus colonies.

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NASSAU, CO.**

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We handle the finest line of bee supplies. Send for our 68-page catalog. Our prices will interest you.

**The Colorado Honey Producers' Association, 1424 Market St.,
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Write for Price List and Booklet descriptive of

**HIGH-GRADE
Italian Queens**

JAY SMITH

Route 3

Vincennes, Ind.



YOU WANT TO SAVE ABOUT 60 PER CENT ON YOUR SUPPLY BILL

We have bought the stock of M. C. Silsbee Company, which we are offering at a saving up to 60 per cent. This stock carries our guarantee, which reserves you the right to return, at our expense, any article not exactly as represented.

It consists of 8 and 10-frame one-story hives, hive bodies, extracting supers, Hoffman frames, shallow extracting frames and bottom-boards.

Dadant's foundation, Lewis beeware, Root's extractors in stock, also storage tanks.

Our office is established in our new building and our office staff reorganized, and your correspondence is assured prompt attention.

Send for shipping tags to ship us your old combs to be rendered.

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MR. BEE KEEPER

You desire your beekeeping to become successful. Then use the best methods and supplies available. These supplies are furnished by us in Dadant's Foundation and Lewis Bee Supplies. Send us samples of your honey and quote your price.

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GLASS JARS**

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ROOT DISTRIBUTORS—LET US SAVE YOU FREIGHT COSTS—GET OUR PRICES

QUEENS, SELECT THREE-BANDED ITALIANS

Reared from the best mothers and mated to select drones.

Prices of Queens

	May 1st to June 1st			June 1st to July 1st			July 1st to Nov. 1st		
	6	12		1	6	12	1	6	12
Untested.....	\$2.00	\$ 9.00	\$16.80	\$1.50	\$ 8.50	\$14.50	\$1.30	\$ 7.50	\$13.50
Select Untested.....	2.25	10.50	18.00	2.00	9.50	16.00	1.75	8.50	15.00
Tested.....	3.00	16.50	30.00	2.50	12.00	22.00	2.00	10.00	18.50
Select Tested.....	3.50	19.50	36.00	3.00	16.50	30.00	2.75	15.00	27.00

Orders booked now for May delivery. Pure mating, safe arrival and entire satisfaction guaranteed. Wings clipped free. Write for descriptive circular.

HARDIN S. FOSTER, Columbla, Tenn.

Crop and Market Report

Compiled by M. G. Dadant

For our September report, we asked the following questions of reporters: 1. How big is the crop? 2. What price are you offered? 3. How is honey selling? 4. What do you expect to realize, wholesale and retail?

THE CROP

The New England States report about one-half crop for the 1920 season, so far, and New York expects about the same amount, with some better reports. Pennsylvania will have a normal crop, although Ohio and practically all central western States will have a much better crop than last year. This is probably owing to the fact that the crop was a failure last year. Michigan will have a much better flow than last year, but there is a shortage of bees, which will seriously influence the total of honey produced. Wisconsin claims an average of 100 pounds per colony, while Minnesota and Kansas state they will have an average larger than last year, as will South Dakota. Missouri will probably have a better crop than last year, although the honey flow is very spotted. In the Southern States they are expecting to have a very small crop, comparatively, say about 40 per cent of last year, and this pertains generally to Alabama and Mississippi, while Georgia and the Carolinas will have about 75 per cent of last year's flow. The only Southern State showing a big crop is Louisiana, which reports the best crop for years. In Texas the flow will be about normal, except in western Texas, which claims about two-thirds of last year. Both New Mexico and Arizona will fall short of last year, as will practically all of the inter-mountain territory. Colorado claims their crop will only be from one-third to one-half, while Montana claims one-half to three-fourths. In Idaho the situation is similar to Montana. California and the Pacific Coast States will have about an average crop.

PRICES OFFERED

Big buyers seem to be slow in offering this year, and reporters have sent in relatively few announcements of prices offered on large lots of honey. Most of these offers will range around 18c to 20c for white extracted and 16 to 18c for amber, with a price of from \$7 to \$8 per case for comb honey. One large producer in Iowa states that he was offered 18c per pound for white extracted, the buyer to furnish the cans. This he accepted.

HOW IS HONEY SELLING?

Honey is selling well in a retail way. Many beekeepers are reporting that they will soon run out of honey and will have to buy a fresh supply to keep their customers from going elsewhere.

In the wholesale market honey is selling slower, due to the fact that the big companies are not yet placing the new crop on the market. They are holding off to see exactly what crop conditions are going to be. In a retail way honey is selling for a price of about \$3 for 10-pound can and \$1.60 to \$1.75 for 5-pound can. This is for white extracted honey. Comb honey is selling at about \$9 per case, retail.

PRICES EXPECTED

In practically all instances the eastern and central western beekeeper expects a higher price than last year. They expect probably 10 per cent to 15 per cent increase on last year's prices, and none of them is willing to sell for less than 20c per pound f. o. b. shipping station. The

fact that they have such an excellent demand locally would indicate that they would hold and get the prices they expect.

The Texas Association is selling their honey readily, and one report stated they only had about 1,000 cases left to sell. They are getting in the neighborhood of 16c to 18c for amber, and 30c for extracted honey packed in 5-gallon cans. The California Association is selling through their distributors at a slightly less price. We know of sales of carloads of amber extracted alfalfa honey from California on a basis of 15c f. o. b. shipping point, while white extracted honey has sold from 16½c to 17½c f. o. b. Los Angeles. These prices are for immediate delivery and remittance. The inter-mountain territory will probably have no difficulty in disposing of their crop this year at fancy prices, as they have usually an excellent grade of honey, which seeks a special market. We understand that the price asked will be in the neighborhood of 20c per pound for extracted, in car lots, and \$7.50 per case for comb honey.

Probably the two factors influencing the demand for honey on the part of large buyers are, first, the influx of New Zealand honey and, second, the drop in price of sugar.

In the last thirty to sixty days there have been several carloads of New Zealand honey come into the San Francisco and New York markets. This is being offered in large and small lots at a price varying from 16c to 17½c f. o. b. the two points mentioned above.

We also know of the offer of a large lot of amber Chilean honey at a price of 14c f. o. b. Los Angeles.

Sugar has begun to drop. Sugar was selling two weeks ago at 22c per pound and is now being offered at from 17c to 18c, wholesale. Moreover, sugar futures would indicate that it will continue to drop until March, being quoted lower as the season advances. Whether this will have very much influence on the price of honey remains to be seen.

Our idea would be that it will not have a great deal of influence, except that it may cut out some sales to firms who will use sugar instead of honey for sweetening with the lower price of sugar.

We believe, however, that this will be offset by the ever growing demand on the part of the consumer for fancy honey. Many reports coming in from beekeepers would indicate that they will sell their honey crop without any effort and that they will need an extra supply to fill their customers' needs. This is probably due to the fact that the consumer has ready cash and is willing to pay for the articles he wants.

We do not see any indication of a large drop in prices of honey, and the replies of reporters would indicate that they expect the price to stiffen as the season advances. Compared with last year, prices are considerably higher. At this time last year amber California honey was selling at from 12c to 14c per pound, whereas today it commands a price of at least 15c per pound. The white honey report of the Ontario Beekeepers' Association is before us. Its date is July 30, 1920. Their average production per colony is 46 pounds, the reports being received from 470 members, together with reports from Quebec and other provinces. The recommendations of the price committee are as follows, f. o. b. shipping points: Best quality light extracted, wholesale, 27c; best quality light extracted, retail, 32c to 40c. No. 1 comb, wholesale, \$7.50 to \$9 per case. No. 2 comb, \$5.50 to \$7.50 per case. The price of 27c wholesale is recommended for honey packed in barrels and for the entire crop of producer.

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